

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

Transport Assessment (TR-001-000)

Part 4: London assessment

Traffic and transport

November 2013

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited.

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6 London Region

6.6 Operation impact assessment for Euston - Station and Approach (CFA1) Camden and HS1 Link (CFA2) and Primrose Hill to Kilburn (Camden) (CFA3)

Euston - Station and Approach (CFA1) Proposed Scheme operation description

- 6.6.1 The general design of the Proposed Scheme is described in ES Volume 1. The following section describes the main features of the Proposed Scheme in the Euston area.

Overview

- 6.6.2 Euston station will become the southern terminus for the Proposed Scheme. The existing Euston station will be reconfigured and enlarged to accommodate high speed train services alongside the existing WCML and other conventional and local rail services. The combined station will become the centrepiece and catalyst for the regeneration and development of the Euston area.
- 6.6.3 Much of the existing station will be retained and remodelled. A concourse and platforms for the high speed train services will replace the western part of the existing station, while also extending further west than the existing station. The high speed and conventional rail platforms will operate as one combined space, as shown in Map CT-o6-001 (Volume 2, Map Book 1). The Proposed Scheme will also involve improvements to Euston underground station as well as Euston Square underground station.
- 6.6.4 The provision of platforms for high speed trains will require widening of the existing railway cutting to the north of Euston station to the west of the existing tracks. The high speed railway will enter a tunnel at the Euston portal, approximately 100m south of Parkway. The portal will be close to the existing conventional railway Park Street Tunnels.
- 6.6.5 The high speed tracks will enter the proposed twin-bore tunnels at a deeper level than the existing railway, requiring the reconstruction of retaining walls on the western side of the cutting. All three of the existing bridges on the Euston station approach will be demolished and rebuilt between Euston station and Parkway. These bridges are:
- A400 Hampstead Road overbridge;
 - Granby Terrace overbridge; and
 - Mornington Street overbridge.

- 6.6.6 The NR conventional railway will remain on, or close, to its current alignment and levels, but two approach lines will be removed requiring rearrangement of signalling and overhead line equipment.

Euston station

- 6.6.7 The key features of the functional design and layout of the Proposed Scheme at Euston are shown on Map CT-o6-001. These include:
- creation of eleven new high speed platforms 415m long and below street level, with a new concourse at street level to accommodate high speed services. This will involve the demolition of the existing station west of the existing platform 15;
 - removal of the existing conventional platforms 9, 10, 16, 17 and 18, retention of the remaining 13 platforms including extensions of platform 8 and 11, and remodelling of the associated station structure;
 - substantial reconstruction and refitting of the existing station concourse, which will be linked with the new high speed concourse to the west;
 - a new northern entrance to the station on A400 Hampstead Road and improved street level entrances from Euston Square Gardens and A4200 Eversholt Street;
 - creation of new ticket sales and retail units on the extended concourse. The retail units will vary in size and will include customer support facilities, cafes, restaurants and shops to serve passengers and the local community;
 - new escalators and lifts will be provided between the high speed part of the concourse and the high speed platforms. Access to the conventional platforms will be improved to cater for an increased number of passengers including direct subsurface exits to the LU station;
 - the current Euston LU station ticket hall will be extended and remodelled to accommodate increased passenger flows. This will include the provision of new escalators serving both the branches of the Northern Line and the Victoria Line;
 - new entrances to the LU station will be provided from the station forecourt, to the north of Euston Square Gardens, and a pedestrian subway will be built beneath A501 Euston Road, with an additional entrance and ticket hall for Euston Square LU station on Gordon Street;
 - facilities for step-free and fire brigade access to the concourse and all platforms will be provided; and
 - the existing station retail units use a service basement under the station that will have limited capacity following the redevelopment of the station. Retail and train servicing will be provided from an improved service area on the service deck, above the northern part of the existing station. Vehicles will

access this via a new service entrance from A4200 Eversholt Street.

6.6.8 There will be opportunities for public realm improvements and reinstatement, including the main entrance forecourt, the bus station and Euston Square Gardens, and a landscaped forecourt to the northern entrance, incorporating part of the existing St James's Gardens.

6.6.9 Substantial changes and improvements to surface access will include:

- a new east-west overbridge across the railway north of the station from A4200 Eversholt Street to A400 Hampstead Road. This will be a pedestrian and cycle bridge;
- a dedicated access for service vehicles to the service deck from A4200 Eversholt Street;
- Cobourg Street will be realigned and extended north to A400 Hampstead Road, and will include a segregated cycle track. There will be a pedestrian priority area, which will provide a cycle link via the southern end of Melton Street to A501 Euston Road;
- the northern end of Gordon Street, which will be closed to vehicles retaining pedestrian and cycle connections;
- the bus station, which will remain south of the station and north of A501 Euston Square Gardens, will be reconfigured to occupy the full east-west width of the gardens. The existing access for eastbound buses from A501 Euston Road will be closed and moved to Melton Street;
- most of the public parking, car hire facilities and care hire pick up/drop off in the existing station will be removed. Disabled parking bays will be provided close to the station entrance;
- improved cycle parking for commuters will be provided, with up to 2,000 spaces at locations around the station;
- additional Barclays Cycle Hire docking stations may be provided, dispersed in streets around the station. Approximately 200 additional Barclays Cycle Hire spaces are proposed;
- improved cycle routes on roads around the station; and
- provision for taxis and private cars to drop-off in A4200 Eversholt Street and at the northern entrance in Cobourg Street, and pick up at the southern end of Cobourg Street.

Station operation

- 6.6.10 The high speed and conventional parts of the station will operate as one entity. The main concourse will be extended to provide sufficient space for passengers on planned HS2 and conventional services and for other users with appropriate links to platform level and the underground stations. It will extend across the whole southern part of the station to include the existing conventional concourse and will include a mall that leads north to the new northern entrance. The concourse will be at the level of the existing Cobourg Street. It will have waiting areas and lounges, passenger information and ticketing facilities, retail outlets, cafes and restaurants and public conveniences. Access to the concourse will not require a ticket.
- 6.6.11 Access to and from high speed trains and platforms will be via access bridges, with banks of escalators and lifts at the north and south ends of the platforms. Passengers on high speed trains will arrive at low level and could either remain at the same level in order to directly access the underground station or take escalators up to the concourse at street level. From the concourse there will be pedestrian routes down to Euston underground station, to the bus station at the front of the station and to a taxi rank on Cobourg Street. The permeable edges to the station will ensure it can be accessed, step free, from the surrounding area and will encourage pedestrian use, particularly along Drummond Street, Cobourg Street and A4200 Eversholt Street.
- 6.6.12 Access between conventional platforms and Euston LU station will be via direct routes from platforms using an upgraded existing concourse basement route.
- 6.6.13 The main station concourse will have a direct connection to the LU station ticket hall. Access to the LU station from outside the train station will be possible from the station forecourt without entering the station concourse. The A501 Euston Road subway will provide a direct sub-surface link to a new entrance for Euston Square LU station on Gordon Street. The Euston Square LU station connection will link the eastern ends of the Euston Square underground station platforms with the Euston Road subway and Euston LU ticket hall.
- 6.6.14 There will be two emergency access entrances to the Euston LU station, one in Euston Square Gardens and the other at the southern end of Cobourg Street.

Station approach

- 6.6.15 This section describes the station approach, between A400 Hampstead Road overbridge and A4201 Parkway, where the high speed railway will enter a tunnel.
- 6.6.16 Key transport features of the design of this area include:
- A400 Hampstead Road overbridge, which currently carries a six-lane road, will

be demolished and rebuilt on its current horizontal alignment. The carriageway level of the replacement bridge will be up to 3.9m higher than at present to allow for longer bridge spans and sufficient clearance for high speed trains to pass underneath;

- Granby Terrace overbridge, which will be demolished and rebuilt on a slightly altered alignment; and
- Mornington Street overbridge, which will be demolished and rebuilt in its current position reinstating the listed elements of the structure.

Highway network

- 6.6.17 The Proposed Scheme introduces several sections of new, diverted, and modified highway. The highway layout for the Proposed Scheme is shown on Figure 6-115 and Figure 6-116. The final highway scheme is anticipated to consist of predominantly 20mph local roads such as Granby Terrace, Eversholt Street, Mornington Street and Cobourg Street. The main distributor roads, namely A400 Hampstead Road and A501 Euston Road, are proposed to remain at a speed limit of 30mph.

Fit for Condition B

Fit for Condition B

- 6.6.18 On A501 Euston Road, a new junction will be created with the new Euston bus station in a location similar to that of the existing junction of A501 Euston Road with Gordon Street and Melton Street. This new signalised junction will allow buses to enter from and exit the bus station on A501 Euston Road. For buses arriving from the east along A501 Euston Road, a right turn bus lane will be provided. This will mean that the number of lanes for 'ahead' movements on A501 Euston Road will be reduced to two (when compared to the existing three). While Gordon Street will be closed to vehicular traffic, a cycle link to A501 Euston Road will be provided. The new signal configuration will allow for this movement of cyclists. A new signalised crossing on A501 Euston Road on the western side of the junction will also be provided.
- 6.6.19 The existing access to the bus station from A501 Euston Road will be closed. The pedestrian crossing on A501 Euston Road will, however, remain in operation.
- 6.6.20 On A4200 Eversholt Street, a new junction will be created at the new northern bus standing and servicing area. The bus standing and servicing area will have separate entry and exit points from A4200 Eversholt Street. The entrance, located just south of Polygon Road, will require vehicles travelling north to turn left while vehicles travelling south will have to turn right when entering the bus standing and servicing area. Vehicles exiting the bus standing and servicing area will do so via a priority junction with A4200 Eversholt Street. The operation of this junction will be important in terms of the overall operation of A4200 Eversholt Street and Polygon Road and has been considered as part of the local highway assessment.
- 6.6.21 On A400 Hampstead Road, a new signalised junction will be created between A400 Hampstead Road, Cobourg Street and Robert Street. As for the existing junction, only left turning movements will be permitted from Robert Street. All movements into Robert Street are permitted as are all movements out of Cobourg Street. Signalised pedestrian crossings will be provided on the Cobourg Street and Robert Street arms of this junction. On A400 Hampstead Road, two lanes will be provided in each direction while three lanes, two left turn lanes and one ahead/right lane, will be provided on Cobourg Street.
- 6.6.22 Approximately 40m north of the junction of A400 Hampstead Road with Cobourg Street and Robert Street, a second new signalised junction is proposed. This will allow access from A400 Hampstead Road (from both the north and south directions) to the passenger set-down area by taxi and private car. A signalised pedestrian crossing will also be provided on the A400 Hampstead Road northern arm of this junction.

- 6.6.23 Due to the realignment of the Granby Terrace overbridge, a new signalised junction with A400 Hampstead Road will be formed. This junction will also include A400 Lidlington Place. Two lanes will be provided on the Granby Terrace approach to the junction, with both allowing left turning movements and right turning permitted from the right lane only. Two lanes will be provided on A400 Hampstead Road in the southbound direction, with three, including a bus lane, provided in the northbound direction.
- 6.6.24 A400 Lidlington Place will remain on its existing alignment with the same number of lanes provided. However, a signalised pedestrian crossing will be provided on the merging lane where traffic travels north from A400 Lidlington Place to A400 Hampstead Road. A signalised pedestrian crossing will also be provided on A400 Hampstead Road just north of Granby Terrace.

Public realm

- 6.6.25 Euston Square Gardens will benefit from moving the bus access to Melton Street. Pedestrian routes through the gardens will also be provided. The bus station will be amended to form a linear bus street between Melton Street and Eversholt Street. It will remain north of the gardens.
- 6.6.26 The remaining part of St James's Gardens will be reinstated as public open space and will be about 40m from the northern entrance.

Avoidance and mitigation measures

- 6.6.27 The following measures have been included as part of the design of the Proposed Scheme and will avoid or reduce impacts on transport users:
- the station has been designed to meet NR and LUL station design criteria and meets these requirements by providing concourse and platform space. This will accommodate passenger demand from the conventional rail lines and HS2 Phase Two beyond 2041 meeting Network Rail and LUL design standards;
 - the design of the station will give improvements in accessibility, compared with the existing station and reduce crowding levels in the concourse, with additional and improved access points which will be aligned with the surrounding street network;
 - a new northern entrance to the station from Hampstead Road providing improved facilities for taxi and car set down, cycle parking, links to bus services and local community access to the station;
 - new escalators and lifts to provide access between the concourse and the high speed platforms;
 - relocation and remodelling of Euston LU station ticket hall to increase passenger area, together with the provision of new escalators serving both the branches of the Northern Line and the Victoria Line to improve platform access;

- a pedestrian subway under A501 Euston Road with a new entrance and ticket hall for Euston Square LU station in Gordon Street to reduce pedestrian journey time across Euston Road;
- new pedestrian subway between Euston station and Euston Square LU station which will provide direct interchange to the Hammersmith & City, Circle and Metropolitan Lines;
- reconfiguration of the bus station into a new 'linear bus street' replacing the existing bus station at the front of Euston station. The new bus station could also accommodate an increased frequency of through bus routes;
- a new bus stand northeast of the station, accessed off A4200 Eversholt Street to enable more buses to serve the station. The bus stand will provide eight additional parking spaces for buses that could accommodate approximately four new terminating bus routes;
- the new east-west overbridge between A4200 Eversholt Street and A400 Hampstead Road to the north of the station, which will benefit cyclists and pedestrians providing additional east-west connectivity across the area;
- substantial increase in the number of cycle parking spaces for station users and additional Barclays Cycle Hire docking stations to cater for the increased demand for cycle parking at Euston station;
- improved cycle routes on roads around Euston station. A north-south cycle route will be provided as a replacement for the partial loss of LCN route 6a (Cardington Street/Melton Street);
- provision for taxis to drop off in A4200 Eversholt Street and at the new northern station entrance, with pick up at the southern end of Cobourg Street. This system will improve operational efficiency of taxi facilities with managed taxi share, which will help reduce empty taxi travel;
- no public car parking provided at the station to promote sustainable travel;
- pick-up and drop-off facilities sized to accommodate the anticipated future demand, including provision for private cars to set down at the new northern entrance; and
- new short-term pick-up and drop-off facility for mobility impaired passengers at the northern concourse entrance, which link to assisted travel services within the station.

Euston - Station and Approach (CFA1) operation impacts

Key operation transport issues

- 6.6.28 Since there are no operational sites within CFA2, and no permanent impact on road, public transport or PRow networks, there are no further impacts beyond the construction stage arising from the proposed works in CFA2, except a short section of permissive path will be realigned to connect with the existing shared permissive path/cycle track from Camley Street to Agar Grove. The net diversion will be around 200m and the number of users is expected to be fewer than 200 per day.
- 6.6.29 However, the permanent road closures and increases in road traffic and public transport use arising from the scheme in CFA1 will have some impact on CFA2.
- 6.6.30 The main impacts of the Proposed Scheme can be summarised as:
- increases to rail passengers arriving and departing Euston station with consequential increases in onward travel by LU, bus, cycle, walk and taxi;
 - permanent road closures and associated diversions around Euston station, including closures to vehicles to all or parts of Cardington Street, Melton Street, Stephenson Way, Drummond Street, Euston Street, Varndell Street at A400 Hampstead Road, Harrington Street, Hampstead Road (a minor road which is not the A400 Hampstead Road), the existing A501 Euston Road bus station access and Gordon Street;
 - the removal or reduction of parking and loading at Cardington Street, Euston Street, Drummond Street, Cobourg Street and Mornington Crescent; and
 - the temporary closure of three paths and one footpath which will be re-provided either as part of the public realm, public open space or on slightly different alignments.
- 6.6.31 The design of the Proposed Scheme and its operation creates a number of beneficial impacts. Rail passengers at Euston station will benefit from increased capacity and improved journey times to the Midlands and beyond, and lower crowding levels on trains as a result of increases in the frequencies of trains.
- 6.6.32 There will be benefits of reduced crowding on existing rail services and benefits from released capacity of existing long-distance services. The introduction of HS2 Phase Two in 2041 is forecast to result in a transfer to Euston station of passengers of high speed conventional rail services who previously would have arrived at King's Cross and St. Pancras International from the north of England. This will result in some relief of King's Cross and St. Pancras International stations, with the benefit of reduced station concourse crowding, and consequent reductions in passenger volumes on Underground lines from King's Cross St. Pancras Underground station.

- 6.6.33 Despite LU planned upgrades, passenger volumes will increase on the Northern and Victoria Lines even without the Proposed Scheme. While the Proposed Scheme will contribute to the increased demand, the Mayor's Transport Strategy will need to bring forward major upgrades and schemes to reduce the impacts of demand.
- 6.6.34 The Proposed Scheme will add to the demand for pedestrian movements on the footways and pedestrian crossings in the vicinity of Euston station. This increase in demand will be mitigated with the provision of new pedestrian infrastructure. This will include a new signalised pedestrian crossing on A501 Euston Road to the west of Gordon Street as well as a new pedestrian subway beneath A501 Euston Road to connect with Gordon Street and Euston Square underground station.
- 6.6.35 The Proposed Scheme will result in an increase in the number of cyclists in the Euston area. However, as part of the Proposed Scheme, connectivity and permeability for cyclists in the Euston area will be improved. Central to this will be the provision of a new East West overbridge that connects the western side of the station on A400 Hampstead Road to A4200 Eversholt Street at the north-west side of the station.
- 6.6.36 The Proposed Scheme will provide an improved linear bus station at the south of the station, in addition to a bus stand on Eversholt Street to the north-east of the station. Together, these bus facilities maintain and increase capacity for through and terminating bus routes, in order to meet the additional demand generated by HS2 Phase One and Phase Two services. The design of the modified bus station and the bus stand will provide flexibility in bus routing and opportunities to reduce wasted bus mileage.
- 6.6.37 Demand for bus routes will be impacted as a result of the Proposed Scheme. While some bus routes will experience a reduction in bus passenger demand due to increase use of underground services, two new bus routes are proposed which will increase the number and frequency of buses in the vicinity of Euston.
- 6.6.38 The Proposed Scheme will require changes to the local road network in the vicinity of Euston station, including the closure of Gordon Street, Melton Street and Cardington Street. The closure of these roads will result in vehicle trips diverting to other routes, including strategic and local routes. Replacement bridges will reinstate the A400 Hampstead Road and Granby Terrace overbridge on altered alignments.
- 6.6.39 Cobourg Street will be permanently realigned and will provide access to a new taxi and private hire facility on the western side of the station. Increases in taxi movements and private car drop-off and pick-up activity will have a substantial impact on traffic flows on a number of roads in the vicinity of Euston station.

- 6.6.40 The Proposed Scheme will remove approximately 450 car parking spaces in and around Euston station. This will have a substantial impact on parking availability in the area although it will encourage more non-car based trips.

Local land uses

- 6.6.41 A number of commercial and residential properties will be lost/relocated in order to deliver the Proposed Scheme in the Euston station and approach area. The westward expansion of the station will mean that all buildings between the western edge of the existing station and the western edge of the proposed high speed station will be demolished. This includes the Ibis Hotel.

Changes in demand 2026 and 2041

- 6.6.42 Use of Euston station will increase substantially in the baseline without the Proposed Scheme to 2026 and 2041, and the increase will be greater with the Proposed Scheme. Table 6-113 sets out the forecast use of the station.

Table 6-113: Forecast rail and LU passengers at Euston

Movement	AM peak period (07:00-10:00)		PM peak period (16:00-19:00)	
	2026 forecast	2041 forecast	2026 forecast	2041 forecast
NR alighting at Euston baseline	29,440	36,100	12,370	15,960
NR alighting at Euston with HS2	36,300 (+23%)	56,420 (+56%)	14,620 (+18%)	28,090 (+76%)
HS2 alighting (included in NR)	10,450	24,670	8,050	18,980
LU boarders baseline (including Euston Square)	36,420	41,860	35,820	41,650
LU boarders with HS2 (including Euston Square)	42,610 (+8%)	56,780 (+36%)	38,500 (+7%)	52,800 (+27%)
Station exit baseline	18,090	22,440	8,370	10,630
Station exit with HS2	20,120 (+11%)	28,240 (+26%)	6,150 (-27%)	8,660 (-19%)

- 6.6.43 With the introduction of the Proposed Scheme (HS2 Phase One) in 2026, rail passengers alighting at Euston station during the AM peak period are forecast to increase from 29,440 to approximately 36,300 passengers (23% increase), compared with the 2026 future baseline. Arrivals at Euston on high speed services in 2026 are forecast to be approximately 10,450.
- 6.6.44 By 2041, AM peak period baseline rail passengers will be forecast to increase to 36,100. With the introduction of HS2 Phase Two, it is estimated that rail passengers alighting at Euston station will increase to approximately 56,420 (56% increase), compared with the 2041 future baseline. This includes 5,200 passengers arriving at Euston by LU services, who would travel on conventional rail services into King's Cross station in the absence of the Proposed Scheme. Arrivals at Euston on high speed services in 2041 are approximately 24,670.

- 6.6.45 With the introduction of the Proposed Scheme (HS2 Phase One) in 2026, onward morning peak LU boarders are forecast to increase from 36,420 in the baseline to 42,610 (17% increase) with the Proposed Scheme and those who exit Euston station to from 18,090 in the baseline to 20,120 (11% increase) with the proposed scheme.
- 6.6.46 By 2041, baseline LU AM peak period boarders are forecast to increase to 41,860 and those who exit the station to 22,440. With the introduction of HS2 Phase Two, LU boarders would increase to 56,780 (36% increase) and people exiting Euston station would increase to 28,240 (26% increase).
- 6.6.47 Similar increases are forecast for the PM peak period, as shown in Table 6-113.

Public transport impacts 2026

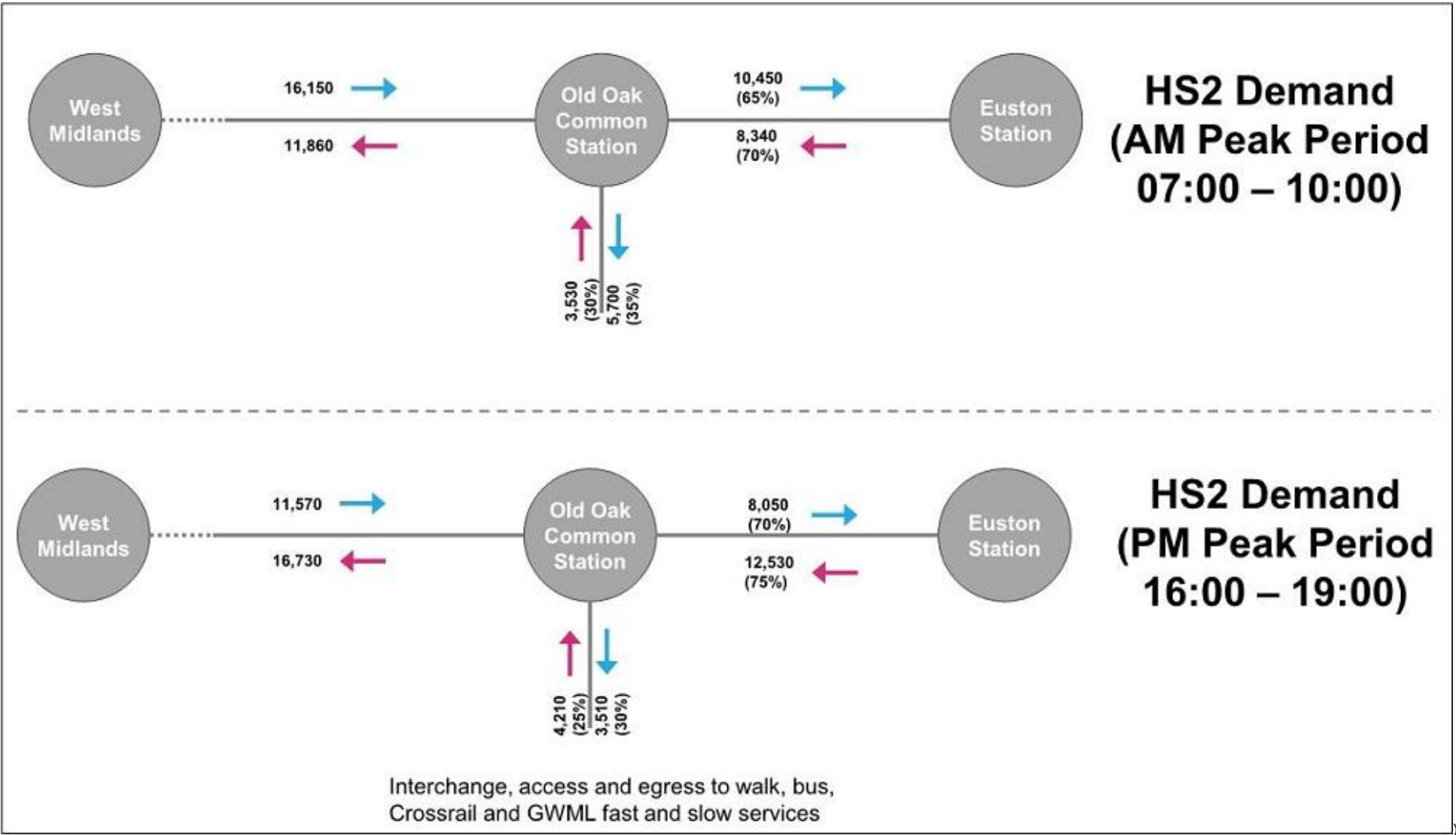
- 6.6.48 The public transport impacts of the Proposed Scheme, including the NR and underground networks, have been assessed using TfL's Railplan model. The impacts of HS2 Phase One in 2026 and HS2 Phase Two in 2033 (but as modelled for 2041) have been compared against the baseline for each year. The demand and network assumptions that make up the 2026 and 2041 future baseline scenarios and the 2026 HS2 Phase One and 2041 Phase Two scenarios, together with the methodology employed for the analysis, are outlined in section 6.2.

Rail network 2026

- 6.6.49 The impacts of the HS2 Phase One in 2026 were assessed by comparing:
- 2026 future baseline Railplan outputs; and
 - HS2 Phase One 2026 Railplan outputs.
- 6.6.50 Old Oak Common Station has been retained in Railplan as TfL's 'base connectivity' case for Old Oak Common. It is important to note that the Old Oak Common scheme tested in Railplan is based on the Consulted Scheme (December 2009) with the May 2012 track alignment.
- 6.6.51 Line flows on HS2 services in 2026 into Old Oak Common and Euston station are shown in Figure 6-117. Flows in the peak direction, into Euston in the AM peak period and from Euston in the PM peak period are approximately 10,450 and 12,530 respectively. Examination of interchanging at Old Oak Common indicates that in the AM peak period, 35% of passengers from the West Midlands alight at Old Oak Common with 65% continuing on to Euston station. The majority of passengers alighting at Old Oak Common are forecast to be interchanging passengers, with few passengers entering or exiting the station. In the counter peak direction, around 70% of HS2 passengers board at Euston with 30% boarding at Old Oak Common.

- 6.6.52 In the PM peak period, around 75% of HS2 passengers board at Euston, with 25% boarding at Old Oak Common. In the counter peak direction, around 30% of passengers from the West Midlands alight at Old Oak Common with 70% continuing on to Euston.

Figure 6-117: HS2 demand and interchange at Old Oak Common, 2026 AM peak period (07:00-10:00)



Euston and Old Oak Common station demand

- 6.6.53 Station usage has been examined to assess the impact of the Proposed Scheme on Euston station. Table 6-114 summarises the AM peak period station demand for Euston in 2026 for both the future baseline and 'with HS2' scenarios. This indicates a decrease or transfer in rail arrivals and departures on InterCity services for the HS2 Phase One scenario of around 12,500 passengers, countered by a small increase in suburban arrivals and departures of around 2,000 passengers. Overall, including HS2, arrivals in the AM peak period increase by around 6,850 (23% increase) and departures by around 1,400 (11% increase).

Table 6-114: 2026 AM peak period (07:00-10:00) Euston station NR demand

Description	2026 baseline			2026 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston NR						
Euston suburban (departing)	2,940	-	2,940	3,110	-	3,110
Euston suburban (arriving)	-	18,660	18,660	-	20,560	20,560
Euston Intercity (departing)	9,050	-	9,050	2,040	-	2,040
Euston Intercity/other (arriving)	-	10,780	10,780	-	5,280	5,280
Euston HS2 (arriving)	-	-	-	-	10,450	10,450
Euston HS2 (departing)	-	-	-	8,340	-	8,340
Sub-total: Euston NR	11,990	29,440	41,430	13,390	36,290	49,780
Old Oak Common (OOC)						
OOC NR (departing slow services)	-	-	-	3,050	7,230	10,280
OOC NR Slow (arriving slow services)	-	-	-	20,140	6,430	26,570
OOC NR (departing fast services)	-	-	-	5,310	-	5,310
OOC NR (arriving fast services)	-	-	-	-	13,120	13,120
OOC HS2 (arriving)	-	-	-	-	5,700	5,700
OOC HS2 (departing)	-	-	-	3,530	-	3,530
Sub-total: OOC	-	-	-	32,030	32,480	64,510

- 6.6.54 The equivalent PM peak period analysis is set out in Table 6-115. This indicates a transfer of demand from rail arrivals and departures on InterCity services to HS2 services for HS2 Phase One in 2026 of around 13,160 passengers, again countered by a small increase in suburban arrivals and departures of around 2,400 passengers. Overall, including HS2, arrivals in the PM peak period increase by around 2,250 (18% increase) and departures by around 7,570 (25% increase).

Table 6-115: 2026 PM peak period (16:00-19:00) Euston Station NR demand

Description	2026 baseline			2026 'with HS2'		
	Board	Alight	Total	Alight	Board	Total
Euston NR						
Euston suburban (departing)	17,200	-	17,200	18,890	-	18,890
Euston suburban (arriving)	-	4,050	4,050	-	4,760	4,760
Euston Intercity (departing)	12,650	-	12,650	6,000	-	6,000
Euston Intercity/other (arriving)	-	8,310	8,310	-	1,800	1,800
Euston HS2 (arriving)	-	-	-	-	8,050	8,050
Euston HS2 (departing)	-	-	-	12,530	-	12,530
Sub-total: Euston NR	29,850	12,360	42,210	37,420	14,610	52,030
Old Oak Common (OOC)						
OOC NR (departing slow services)	-	-	-	9,760	22,600	32,360
OOC NR Slow (arriving slow services)	-	-	-	9,110	2,880	11,990
OOC NR (departing fast services)	-	-	-	12,680	-	12,680
OOC NR (arriving fast services)	-	-	-	-	6,830	6,830
OOC HS2 (arriving)	-	-	-	-	3,510	3,510
OOC HS2 (departing)	-	-	-	4,210	-	4,210
Sub-total: OOC	-	-	-	35,760	35,820	71,580

Underground station demand

6.6.55 Station usage has been examined to assess the impact of the Proposed Scheme in 2026 on Euston and Euston Square LU stations. Table 6-116 and Table 6-117 summarise the AM peak period and PM peak period station demand for Euston in 2026, for both the future baseline and 'with HS2' scenarios respectively.

Table 6-116: 2026 AM peak period (07:00-10:00) Euston station NR demand

Description	2026 baseline			2026 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston LU						
Northern Line Charing Cross Branch (northbound)	1,780	2,060	3,840	1,890	2,430	4,320
Northern Line Charing Cross Branch (southbound)	5,570	1,410	6,980	6,180	1,940	8,120
Northern Line Bank Branch (northbound)	3,600	3,480	7,080	3,660	2,730	6,390
Northern Line Bank Branch (southbound)	8,170	6,720	14,890	7,8430	6,790	14,620
Victoria Line (northbound)	2,820	9,740	12,560	2,960	7,860	10,820
Victoria Line (southbound)	9,450	3,790	13,240	9,890	3,950	13,840

Description	2026 baseline			2026 'with HS2'		
Sub-total: Euston LU	31,395	27,185	58,580	32,421	25,700	58,121
Euston Square LU						
Metropolitan Line (northbound/westbound)	1,200	4,380	5,580	2,800	6,500	9,300
Metropolitan Line (southbound/eastbound)	3,820	5,420	9,240	7,380	6,950	14,330
Sub-total: Euston Square LU	5,030	9,800	14,830	10,180	13,440	23,620

Table 6-117: 2026 PM peak period (16:00 - 19:00) Euston station NR demand

Description	2026 baseline			2026 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston LU						
Northern Line Charing Cross Branch (northbound)	2,650	4,450	7,100	3,220	4,890	8,110
Northern Line Charing Cross Branch (southbound)	4,230	2,030	6,260	4,490	2,100	6,590
Northern Line Bank Branch (northbound)	5,710	5,340	11,050	5,780	4,170	9,950
Northern Line Bank Branch (southbound)	3,950	4,690	8,640	3,410	4,770	8,180
Victoria Line (northbound)	3,440	12,870	16,310	3,360	12,750	16,110
Victoria Line (southbound)	8,290	3,320	11,610	8,200	3,450	11,650
Sub-total: Euston LU	28,250	32,700	60,950	28,460	32,120	60,580
Euston Square LU						
Metropolitan Line (northbound/westbound)	3,000	5,570	8,570	4,180	10,050	14,230
Metropolitan Line (southbound/eastbound)	4,580	3,740	8,320	5,870	6,390	12,260
Sub-total: Euston Square LU	7,570	9,310	16,880	10,050	16,440	26,490

6.6.56 The increase in boarders and alighters at Euston with the Proposed Scheme results in an increase in LU passengers. During the AM peak period, the change in LU boarders and alighters is modest with increases on the Northern Line Charing Cross branch but corresponding reductions on the Northern Line Bank branch and Victoria Line as a result of pre-existing crowding levels on these lines. However, there is a substantial increase in boarders and alighters at Euston Square with an increase of 5,090 passengers in the westbound direction and 3,720 passengers in the eastbound direction. This accounts for passengers travelling eastbound from Euston Square and interchanging to the Northern Line Bank branch at Moorgate. The new link from the HS2 platforms to Euston Square station will facilitate this movement.

6.6.57 This increase is repeated in the PM peak with increases on the Northern Line Charing Cross branch but corresponding reductions on the Northern Line Bank branch and Victoria Line leading to a small net reduction on all lines combined (370 passengers)

Impact on zone 1 stations

6.6.58 Table 6-118 shows the impact of the Proposed Scheme during the AM peak period on stations within (fare) Zone 1, together with Camden Town, Mornington Crescent and Ealing Broadway stations. The impacts are shown in decreasing order of absolute change in number of access, egress and interchange passengers. Any station within Zone 1 with a change of less than +/- 100 passengers has been excluded from Table 6-118.

Table 6-118: 2026 access, egress and interchange trips at Zone 1 LU stations - AM peak period (07:00-10:00)

Station	2026 baseline	2026 'with HS2'	Absolute difference	Relative difference
Euston (including Euston Square)	75,240	80,440	5,200	7%
Liverpool Street	101,630	102,960	1,330	1%
Farringdon	62,300	63,490	1,190	2%
London Bridge	153,610	154,470	860	1%
Baker Street	35,000	35,720	720	2%
Bond Street	59,420	60,080	660	1%
Moorgate	32,280	32,650	370	1%
Green Park	51,120	51,410	290	1%
Edgware Road (District, Circle, Hammersmith & City)	6,520	6,720	200	3%
Victoria	130,900	131,100	200	0%
Aldgate	13,120	13,300	180	1%
Marble Arch	5,820	6,000	180	3%
Tower Hill	13,470	13,630	160	1%
St James's Park	16,120	16,270	150	1%
Warren Street	15,370	15,510	140	1%
Angel	18,770	18,910	140	1%
Piccadilly Circus	15,730	15,860	130	1%
Pimlico	14,100	14,200	100	1%
Leicester Square	24,020	23,900	-120	-1%
Regent's Park	5,140	5,000	-140	-3%
Chancery Lane	15,760	15,580	-180	-1%
Great Portland Street	12,420	12,230	-190	-2%
Goodge Street	20,000	19,740	-260	-1%
St. Pancras	17,610	17,330	-280	-2%
Elephant and Castle	18,860	18,510	-350	-2%

Station	2026 baseline	2026 'with HS2'	Absolute difference	Relative difference
Lancaster Gate	2,060	1,660	-400	-20%
Bank	89,900	89,320	-570	-1%
Marylebone	21,110	20,440	-670	-3%
King's Cross	54,200	52,480	-1,720	-3%
Paddington	70,140	49,030	-21,110	-30%
Sub-total	1,197,840	1,185,140	-12,700	-1%
Total (all Zone 1)	1,858,140	1,844,920	-13,220	-1%
Camden Road	16,000	16,100	100	1%
Mornington Crescent	2,530	2,560	30	2%
Ealing Broadway	26,110	27,230	1,120	4%

- 6.6.59 The largest increase in absolute and percentage terms in the AM peak period is at Euston station (including Euston Square station), where station activity increases by just over 5,200 passengers, an increase of 7%.
- 6.6.60 The impacts on other Zone 1 stations are relatively small, with the exception of some Crossrail stations with increases in activity at Liverpool Street, Farringdon and Bond Street. Lancaster Gate shows a 20% decrease in passenger demand, although the absolute change is small as this is a lightly used station. This is a function of Crossrail offering improved distribution and connections with HS2 Phase One in 2026.
- 6.6.61 The Proposed Scheme will also result in a number of positive impacts at some Zone 1 stations, with reductions in passenger demand. The largest decrease is at Paddington (21,110 passengers or 30%), due to the interchange at Old Oak Common onto Crossrail services. In effect, these are passengers who, in the 2026 future baseline, would have interchanged between GWML (fast) services and Crossrail at Paddington. However, with HS2 Phase One, these passengers make the same interchange earlier at Old Oak Common, combined with HS2 passengers alighting at Old Oak Common and boarding Crossrail, rather than continuing on HS2 to Euston.
- 6.6.62 Outside Zone 1, Ealing Broadway has a reasonable increase in activity as it offers good connections to Old Oak Common and the Proposed Scheme. Total activity at all Zone 1 stations decreases by approximately 1%.
- 6.6.63 A similar pattern is evident for the PM peak period, as shown in Table 6-119, with an increase of 6,280 passengers (8%) at Euston, and a reduction of 22,800 (32%) at Paddington. Crossrail stations experience an increase in station activity for those reasons set out for the AM peak period.

Table 6-119: 2026 access, egress and interchange trips at Zone 1 LU stations - PM peak period (16:00-19:00)

Station	2026 baseline	2026 'with HS2'	Absolute difference	Relative difference
Euston (including Euston Square)	79,680	85,960	6,280	8%
Bond Street	78,250	79,740	1,490	2%
Farringdon	68,680	69,760	1,080	2%
Liverpool Street	86,710	87,670	960	1%
Baker Street	50,110	50,790	680	1%
Moorgate	27,630	28,150	520	2%
Embankment	37,190	37,580	390	1%
Victoria	136,930	137,310	380	0%
Warren Street	16,110	16,490	380	2%
Pimlico	18,200	18,500	300	2%
London Bridge	96,940	97,200	260	0%
Edgware Road (District, Circle, Hammersmith & City)	10,300	10,550	250	2%
Angel	19,620	19,800	180	1%
St. James's Park	13,370	13,520	150	1%
Waterloo	128,660	128,810	150	0%
Leicester Square	35,050	35,180	130	0%
Borough	7,870	8,000	130	2%
Knightsbridge	14,640	14,760	120	1%
Marble Arch	8,560	8,680	120	1%
Aldgate	14,870	14,980	110	1%
Regent's Park	7,210	7,110	-100	-1%
City Thameslink	14,650	14,480	-170	-1%
Green Park	69,390	69,210	-180	0%
Great Portland Street	13,930	13,750	-180	-1%
Goodge Street	17,760	17,560	-200	-1%
St. Pancras	19,240	19,040	-210	-1%
Holborn	29,810	29,590	-220	-1%
Lancaster Gate	2,940	2,690	-250	-9%
Piccadilly Circus	19,630	19,370	-260	-1%
Bank	86,950	86,310	-640	-1%

Station	2026 baseline	2026 'with HS2'	Absolute difference	Relative difference
Marylebone	22,500	21,590	-910	-4%
Oxford Circus	95,710	94,750	-960	-1%
King's Cross	56,780	54,900	-1,880	-3%
Paddington	71,350	48,550	-22,800	-32%
Sub-total	1,505,300	1,491,540	-13,760	-1%
Total (all Zone 1)	1,930,410	1,915,930	-14,480	-1%
Camden Road	27,090	27,000	-90	0%
Mornington Crescent	2,990	3,130	140	5%
Ealing Broadway	25,110	26,090	980	4%

Impact on passenger flows

6.6.64 The impact of the Proposed Scheme on NR services can be seen in Table 6-120 and in Figure 6-118 and Figure 6-119 for the AM and PM peak periods respectively, with the red bars representing an increase in demand and the green bars a decrease.

Table 6-120: 2026 passenger flows (AM and PM peak periods) on NR

Service	Direction	AM peak period (07:00-10:00)			PM peak period (16:00-19:00)		
		2026 baseline	2026 'with HS2'	% difference	2026 baseline	2026 'with HS2'	% difference
Conventional suburban	Inbound	18,660	20,560	10%	4,050	4,760	18%
	Outbound	2,940	3,110	6%	17,200	18,890	10%
Conventional inter-city	Inbound	10,780	5,280	-51%	8,310	1,800	-78%
	Outbound	9,050	2,040	-77%	12,650	6,000	-53%
HS2 at Euston	Inbound	-	10,450	-	-	8,050	-
	Outbound	-	8,340	-	-	12,530	-
HS2 at Old Oak Common	Inbound	-	16,150	-	-	11,570	-
	Outbound	-	11,860	-	-	16,730	-
GWML slow/Crossrail (Acton to OOC)	Eastbound	23,890	29,320	23%	12,630	13,520	7%
	Westbound	11,470	12,200	6%	22,450	27,570	23%
GWML fast (OOC to Paddington (IC))	Eastbound	26,260	12,750	-51%	13,190	6,620	-50%
	Westbound	11,330	6,400	-44%	25,000	10,830	-57%
GWML slow (OOC to Paddington (ML))	Eastbound	4,520	1,230	-73%	610	230	-63%
	Westbound	-	-	-	2,570	380	-85%

Figure 6-118: 2026 Impacts on NR - AM peak period

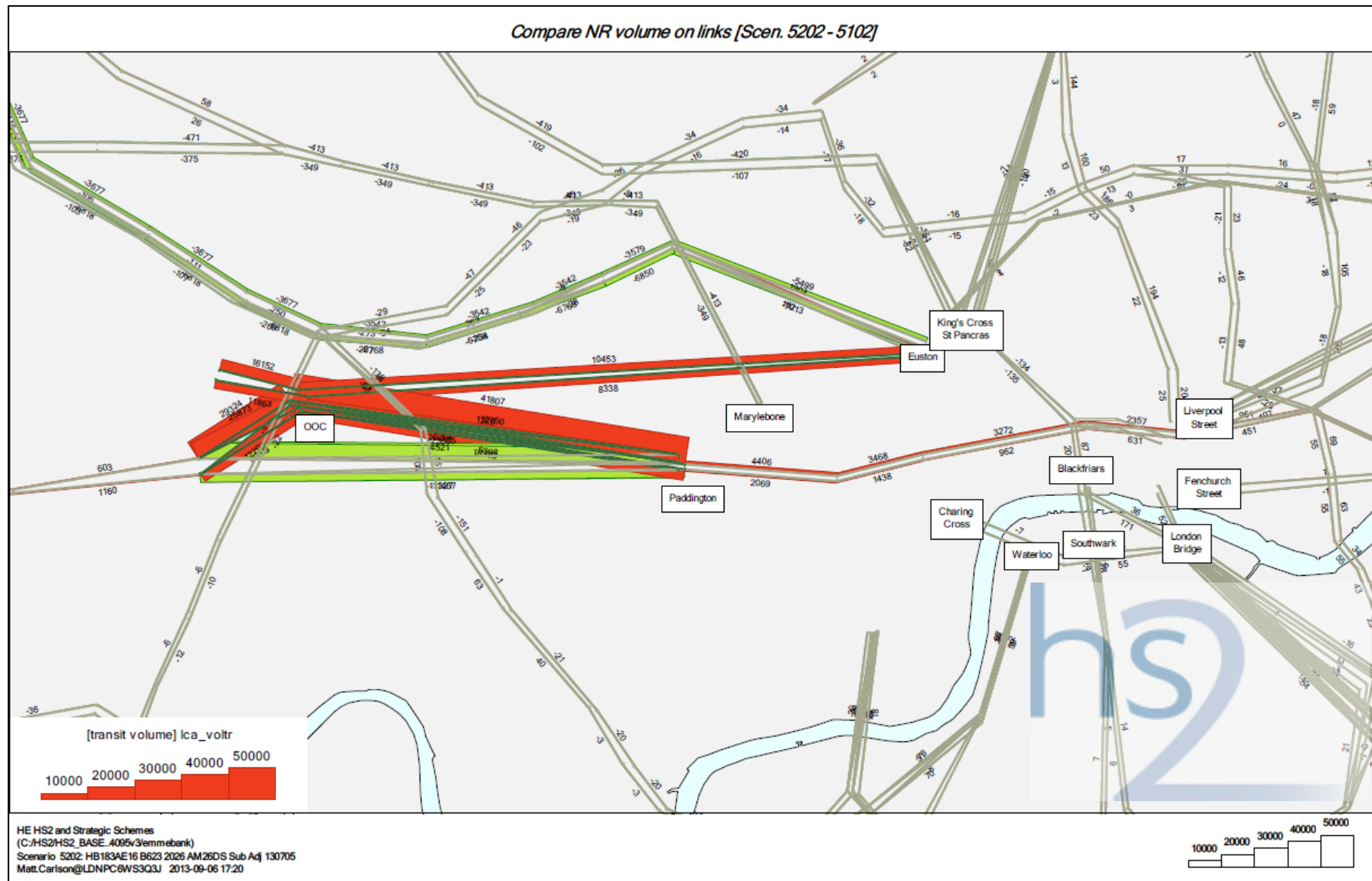
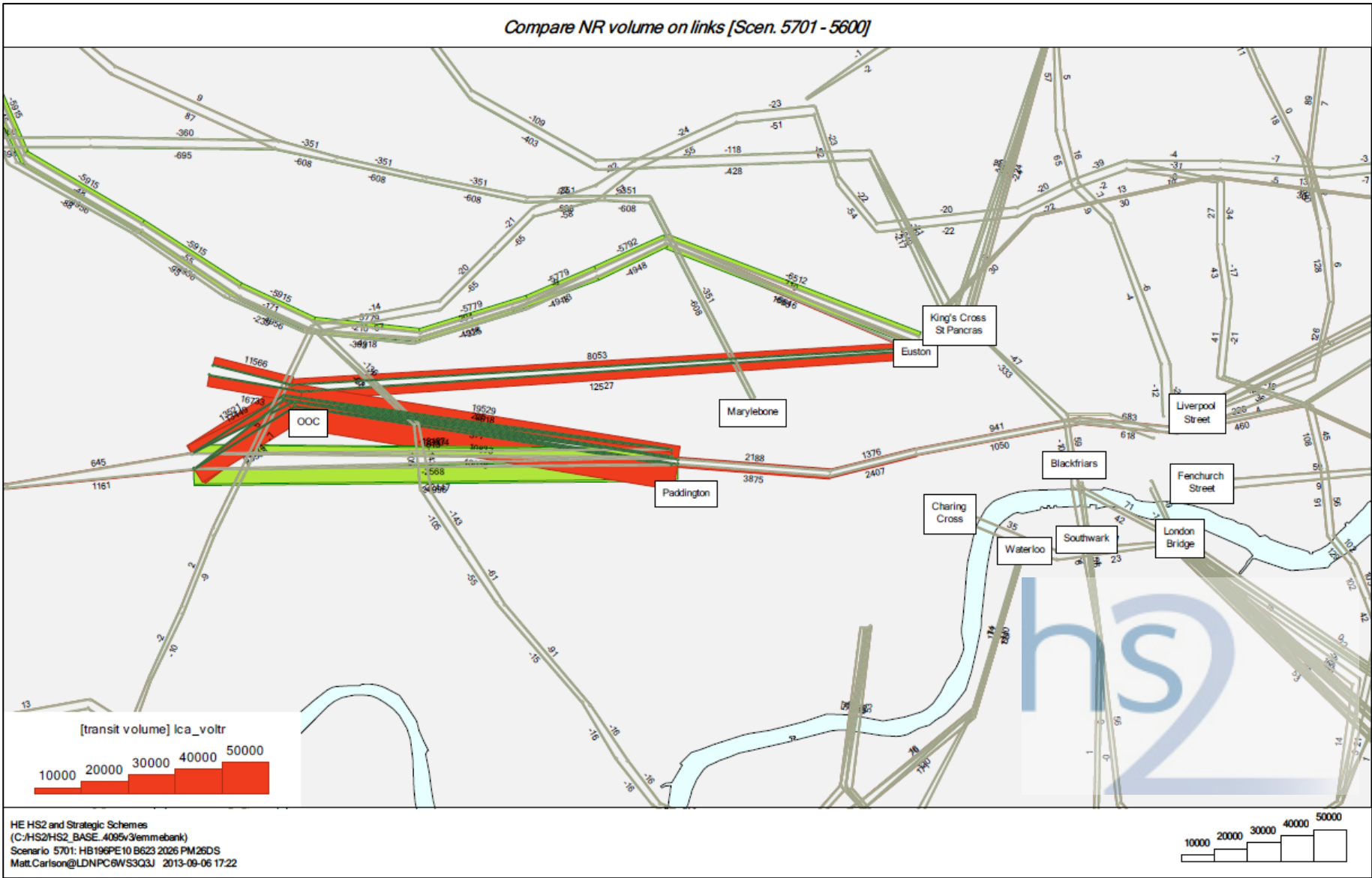


Figure 6-119: 2026 Impacts on NR - PM peak period



- 6.6.65 A feature of the pattern of the AM peak boarders and alighters at Old Oak Common is the level of interchange between Great West Mainline (GWML) (fast) eastbound services and GWML (slow) or Crossrail eastbound services. The attractiveness of this option results in increases in passenger flows on the GWML and Crossrail services between Old Oak Common and Paddington.
- 6.6.66 Figure 6-118 and Figure 6-119 show increased passenger loadings along the HS2 corridor with passenger transfer from the existing NR corridors occurring. The increases in passenger loadings into and out of Paddington station are also shown. This is directly associated with the interchange between GWML and Crossrail services at Old Oak Common.
- 6.6.67 The impact of the HS2 Phase One in 2026 on passenger flows to and from Euston station and Euston Square station for LU, and on Crossrail and London Overground (North London Line (NLL) and West London Line (WLL)) services are set out in and shown in Table 6-121 and Figure 6-120 and Figure 6-121 for the AM and PM peak periods respectively. On Figure 6-120 and Figure 6-121, the red bars represent an increase in demand while the green bars represent a decrease in demand.

Table 6-121: 2026 passenger flows (AM and PM peak periods) underground

Service	Direction	AM peak period (07:00-10:00)			PM peak period (16:00-19:00)		
		2026 baseline	2026 'with HS2'	% difference	2026 baseline	2026 'with HS2'	% difference
Victoria Line (north of Euston)	Northbound	25,290	25,890	2%	58,090	58,140	0%
	Southbound	61,870	62,120	0%	32,190	32,210	0%
Victoria Line (south of Euston)	Northbound	32,210	30,790	-4%	67,530	67,520	0%
	Southbound	67,540	68,050	1%	37,160	36,960	-1%
Northern Line Bank branch (North of Euston)	Northbound	18,940	19,190	1%	32,790	32,720	0%
	Southbound	36,160	36,260	0%	22,690	22,940	1%
Northern Line Bank branch (South of Euston)	Northbound	18,820	18,260	-3%	32,420	31,130	-4%
	Southbound	37,610	37,310	-1%	21,950	21,580	-2%
Northern Line CC branch (north of Euston)	Northbound	11,330	11,320	0%	27,960	28,190	1%
	Southbound	32,090	32,120	0%	20,950	20,930	0%
Northern Line CC branch (south of Euston)	Northbound	11,600	11,860	2%	29,760	29,870	0%
	Southbound	36,250	36,360	0%	23,140	23,330	1%
Metropolitan, H&C and Circle Lines (west of Euston Square)	Eastbound	35,010	35,000	0%	30,980	32,180	4%
	Westbound	28,050	28,610	2%	30,140	29,830	-1%
Metropolitan, H&C and Circle Lines (east of Euston Square)	Eastbound	33,410	35,440	6%	31,820	31,660	-1%
	Westbound	31,230	32,300	3%	32,710	35,700	9%
Crossrail OOC to Paddington	Eastbound	23,890	41,810	75%	12,630	19,530	55%
	Westbound	11,470	16,380	43%	22,450	40,040	78%
Crossrail Paddington to Bond Street	Eastbound	42,240	46,640	10%	24,250	26,440	9%
	Westbound	19,370	21,430	11%	38,880	42,760	10%
Crossrail Bond Street to Tottenham Court Road	Northbound	36,660	40,130	9%	41,000	42,380	3%
	Southbound	36,060	37,480	4%	41,660	44,070	6%
NLL Acton to Willesden Junction	Northbound	980	970	-1%	2,270	2,270	0%
	Southbound	1,300	1,280	-2%	750	740	-1%
WLL Shepherds Bush to Willesden Junction	Eastbound	2,870	2,810	-2%	3,100	3,030	-2%
	Westbound	3,790	3,770	0%	2,930	2,930	0%

Figure 6-120: 2026 Impacts on LU - AM peak period (07:00-10:00)

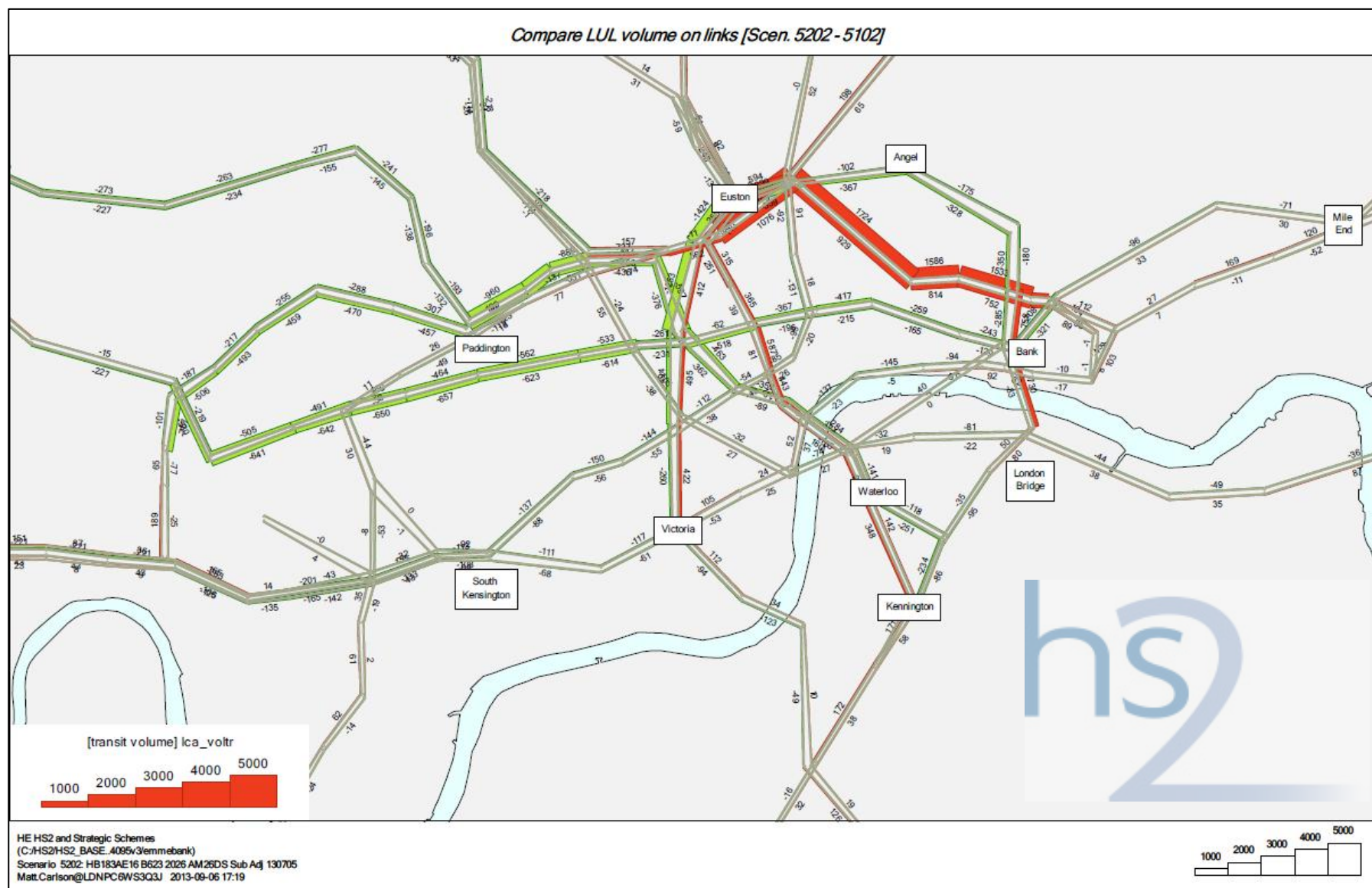
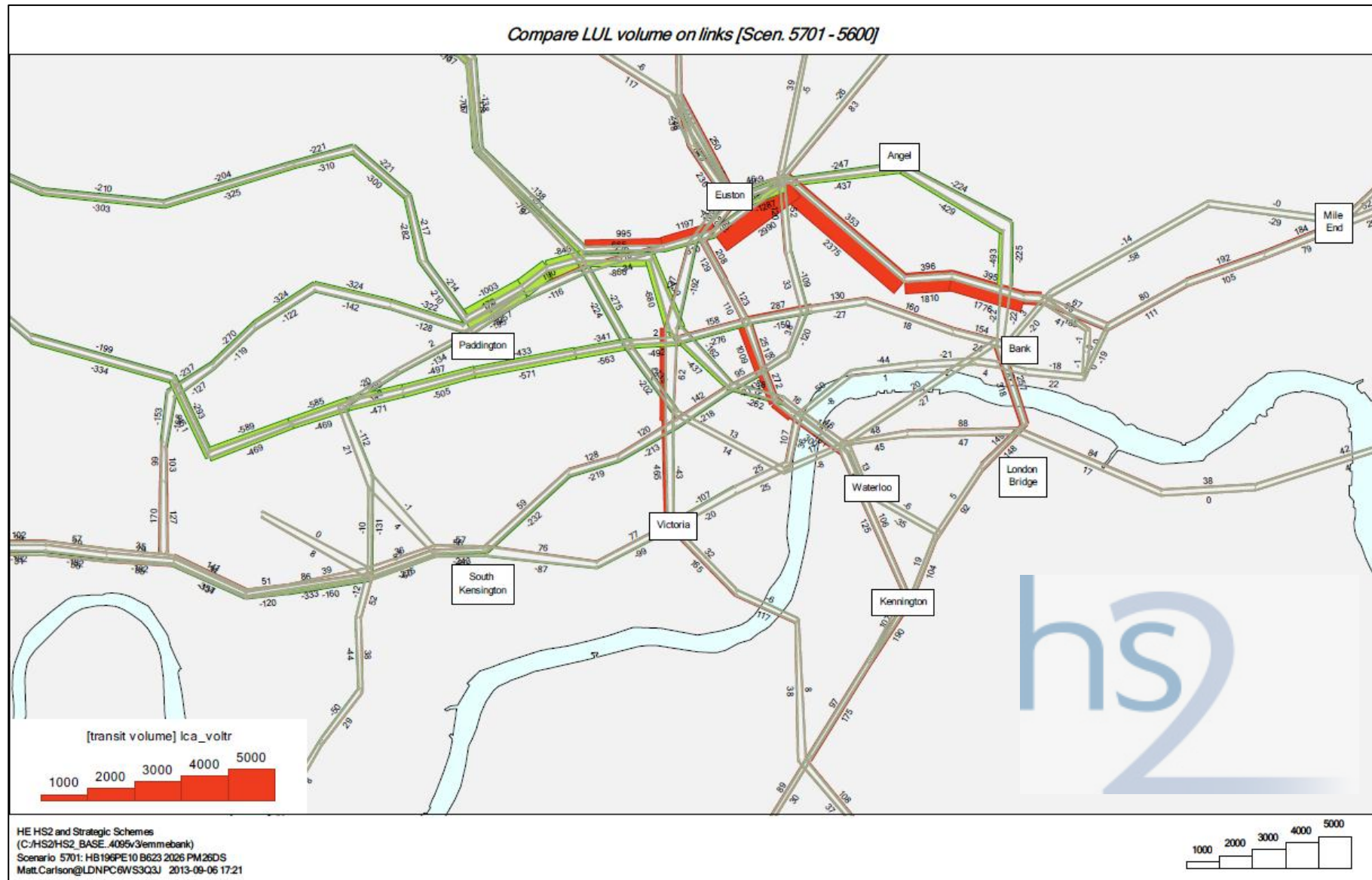


Figure 6-121: 2026 Impacts on LU - PM peak period (16:00-19:00)



The increase in conventional and HS2 boarders and alighters at Euston station with the Proposed Scheme in 2026, results in an increase in LU passengers. During the AM peak period, the change in LU flows is modest with some small increases on the Northern Line Charing Cross branch, but corresponding small reductions on the Northern Line Bank branch and Victoria Line. However, there is a substantial increase in LU flows to and from Euston Square, with an increase east of Euston Square of 2,030 passengers in the AM peak eastbound direction and 2,990 passengers in the PM peak westbound direction. This is supported by the flow increases which indicates the largest increases on the sub-surface lines (i.e. Circle, Metropolitan and Hammersmith & City Lines) from Euston Square particularly as far as Moorgate where there is interchange onto the southbound Bank branch of the Northern Line. This is a result of crowding on the LU lines from Euston making the sub-surface lines (Metropolitan, Hammersmith & City and Circle Lines) an attractive option. A more detailed description of crowding is presented later in this section.

- 6.6.68 Figure 6-120 and Figure 6-121 also show the secondary impact of the level of interchange available between the Proposed Scheme and GWML and Crossrail services at Old Oak Common. The attractiveness of this option results in flow reductions on the sub-surface LU lines (Metropolitan, Circle and Hammersmith & City Lines) from Paddington and on the Central Line, particularly between White City and Oxford Circus. This also accounts for the large increases in passenger demand on Crossrail services between Old Oak Common and Paddington.

Impact on crowding levels

- 6.6.69 Whilst the increase in passenger volumes on NR and LU services associated with the HS2 Phase One in 2026 have been discussed, it is important to also consider the impacts of the Proposed Scheme on NR and LU service crowding. The impact of the Proposed Scheme on crowding on NR and LU services has been assessed using TfL's post-model crowding processes within Railplan, with four passengers per square metre (PPSM) considered as a proxy for practical capacity.
- 6.6.70 Figure 6-122 to Figure 6-125 show AM peak crowding on the NR and LU during the 2026 future baseline and with HS2 Phase One.

Figure 6-122: LU crowding – 2026 future baseline AM peak period (07:00-10:00)

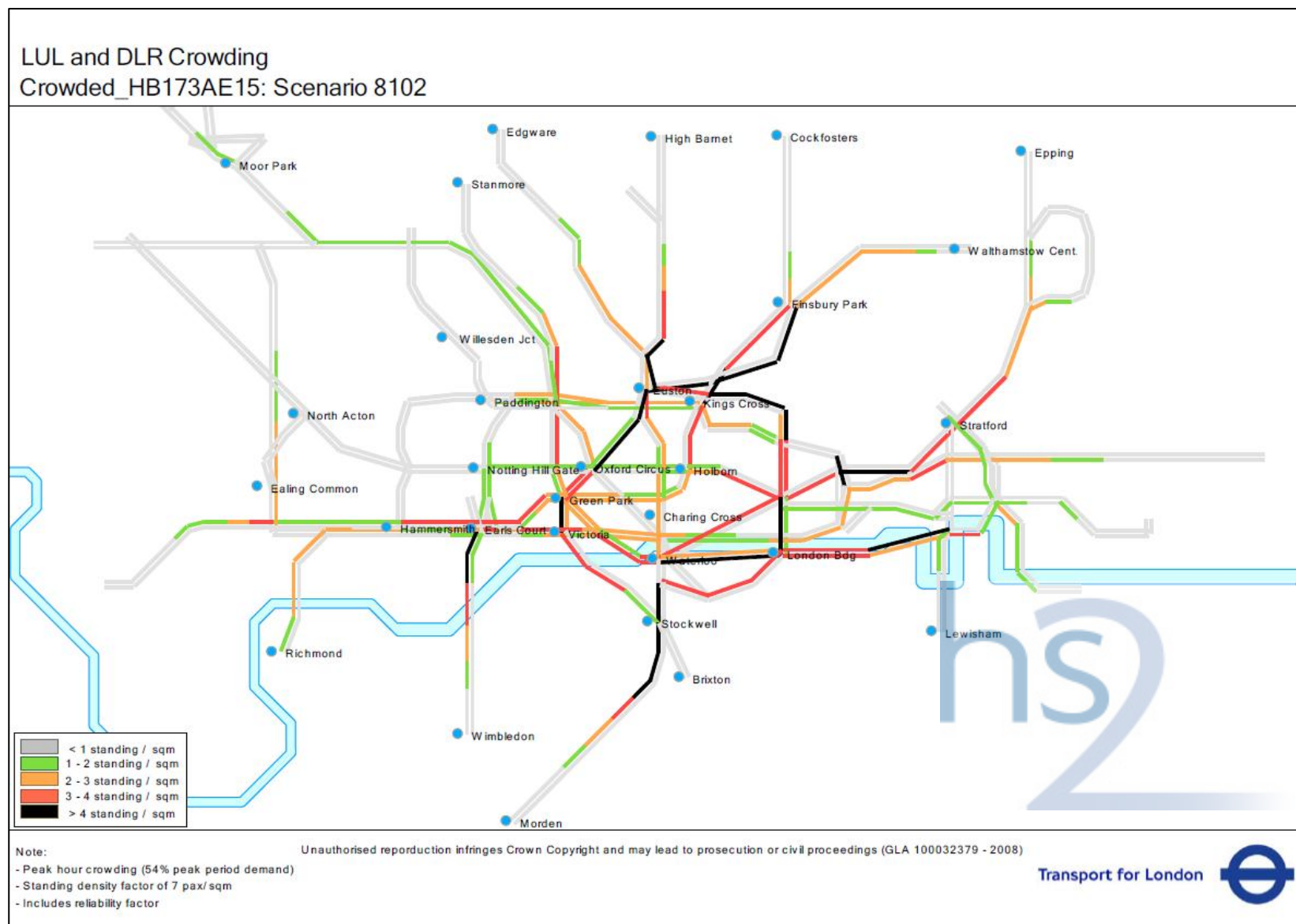


Figure 6-123: LU crowding – 2026 HS2 Phase One AM peak period (07:00-10:00)

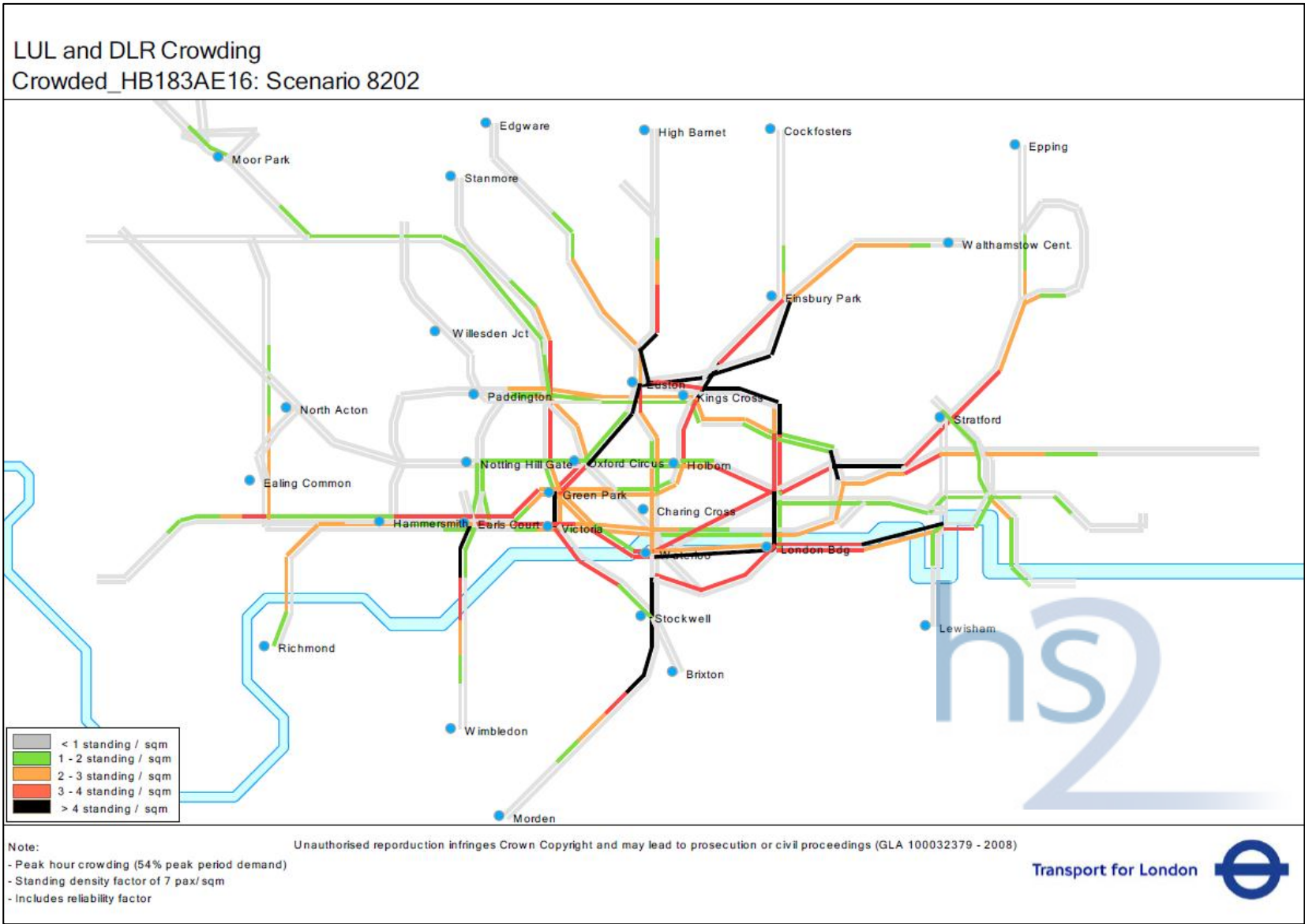


Figure 6-124: NR crowding - 2026 future baseline AM peak period (07:00-10:00)

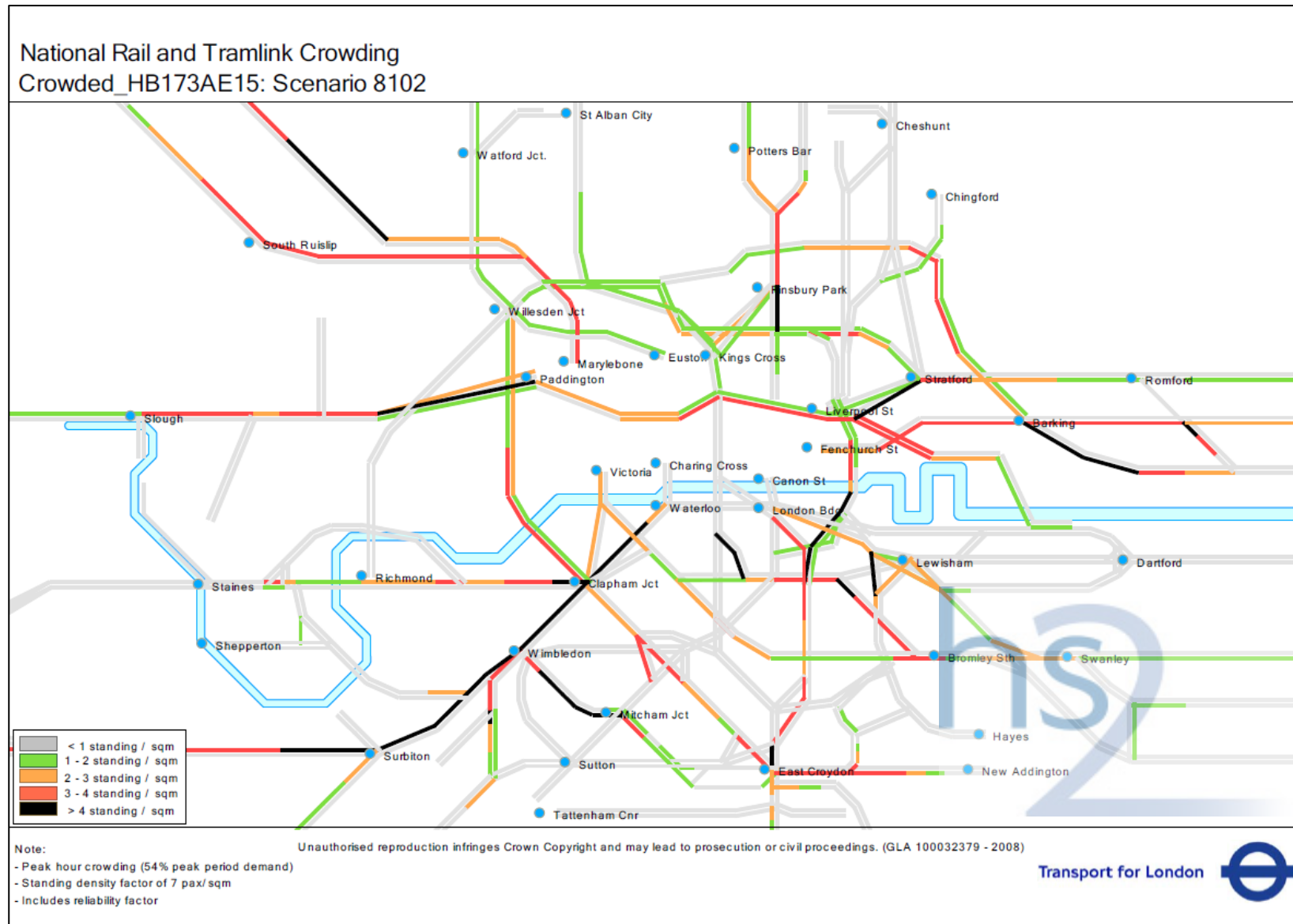
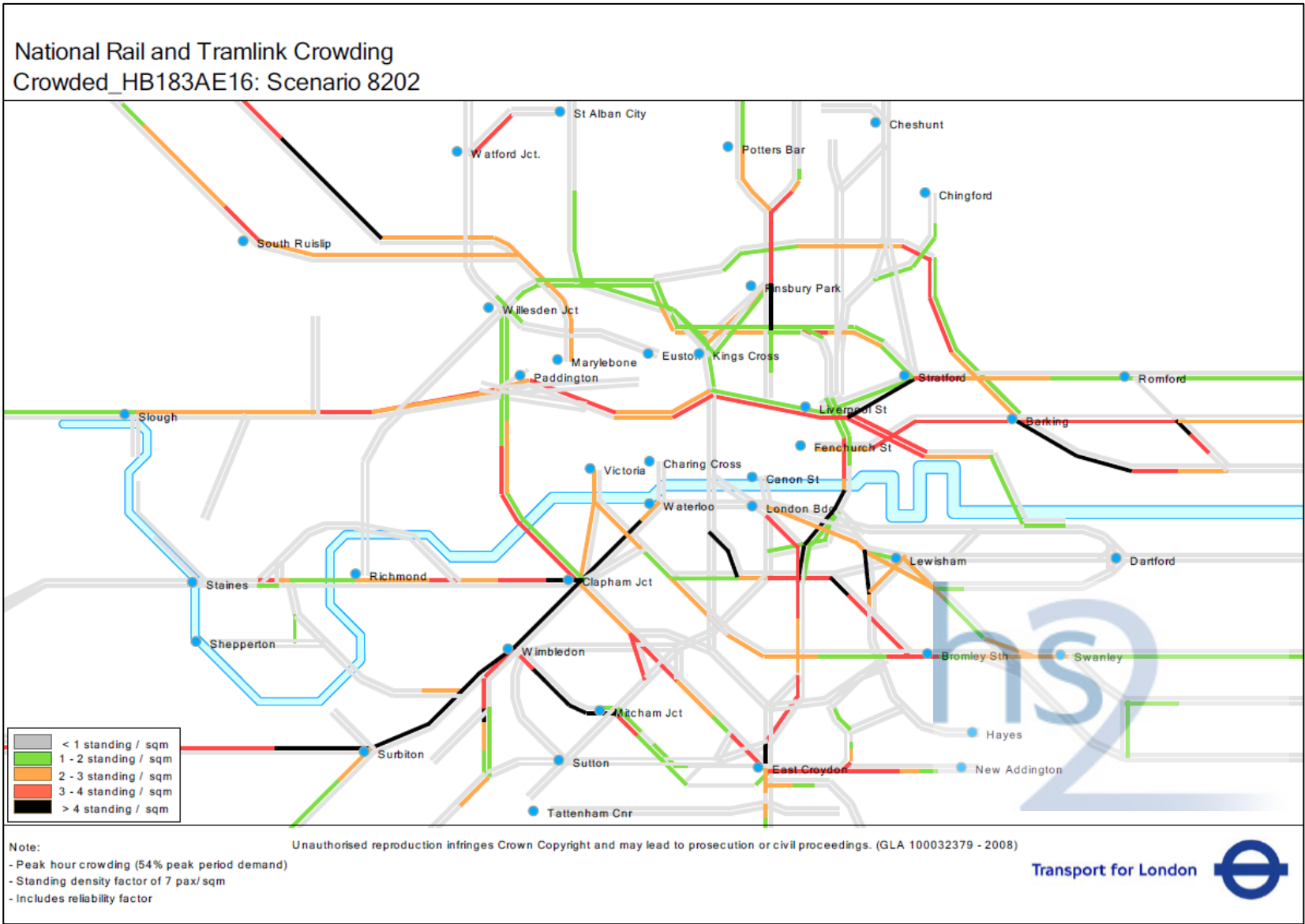


Figure 6-125: NR crowding - 2026 HS2 Phase One AM peak period (07:00-10:00)



6.6.71 The analysis shows:

- an increase from less than 1 PPSM to between 1 - 2 PPSM in each direction on the sub-surface (Metropolitan, Circle and Hammersmith & City) lines between Moorgate and Liverpool Street;
- a reduction in crowding on the Chiltern line between South Ruislip and Marylebone with a decrease from 3 - 4 PPSM to 2 - 3 PPSM;
- a reduction in crowding on GWML services into Paddington from greater than 4 PPSM to 2 - 3 PPSM;
- a consequential decrease in crowding on Crossrail between Paddington and Bond Street from 3 - 4 PPSM to 2 - 3 PPSM; and
- a reduction in crowding on the WCML between Watford Junction and Euston (1 - 2 PPSM to less than 1 PPSM) and an increase on the Abbey line between St Albans City and Watford Junction (less than 1 PPSM to 3 - 4 PPSM).

6.6.72 The reductions in crowding are a positive impact of the Proposed Scheme due to the level of interchange with HS2 services available with GWML and Crossrail services at Old Oak Common.

6.6.73 Figure 6-126 to Figure 6-129 show the PM peak crowding on the NR and LU during the 2026 future baseline and with the Proposed Scheme in 2026.

Figure 6-126: LU crowding – 2026 future baseline PM peak period (16:00-19:00)

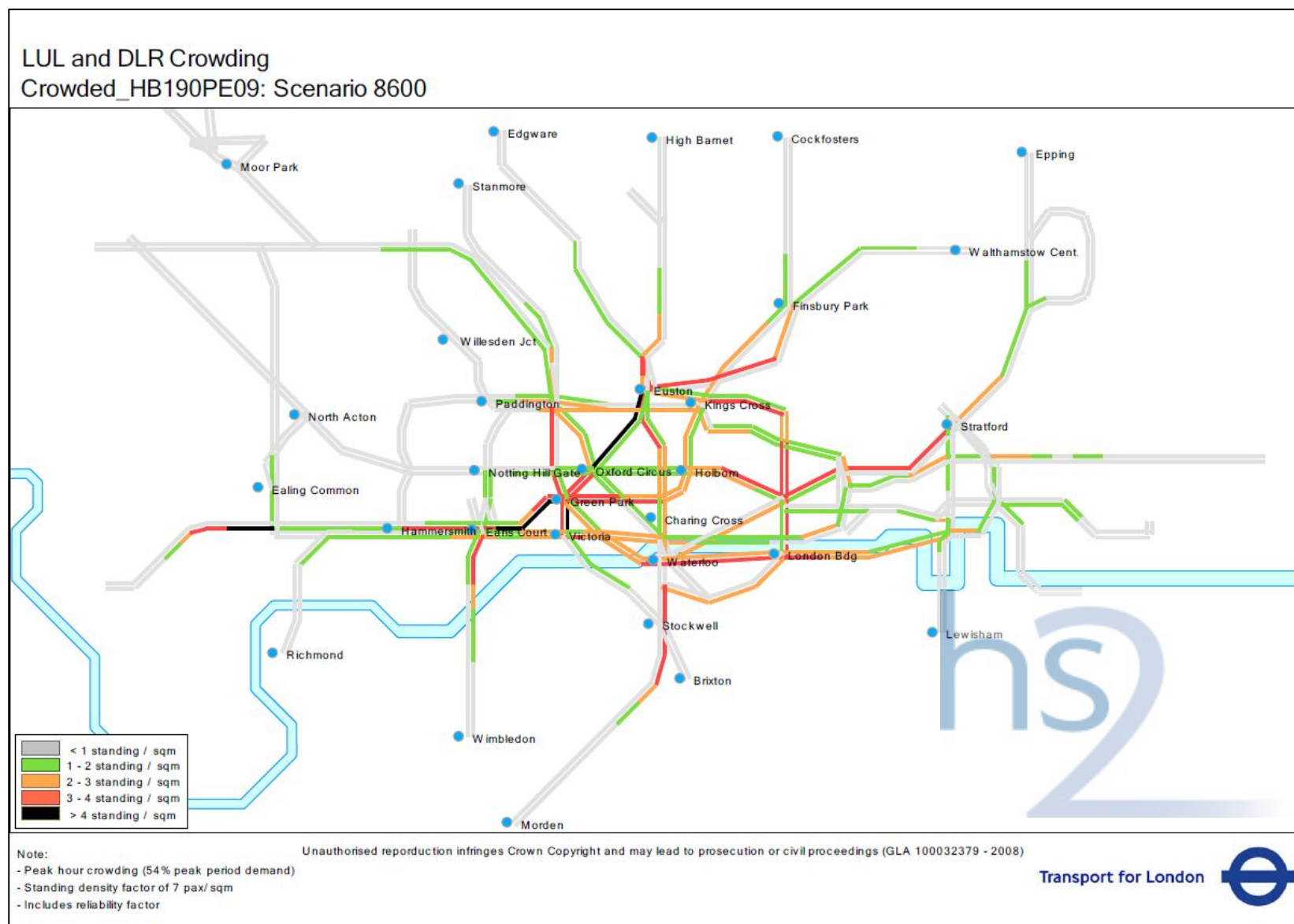


Figure 6-127: LU crowding – 2026 HS2 Phase One PM peak period (16:00-19:00)

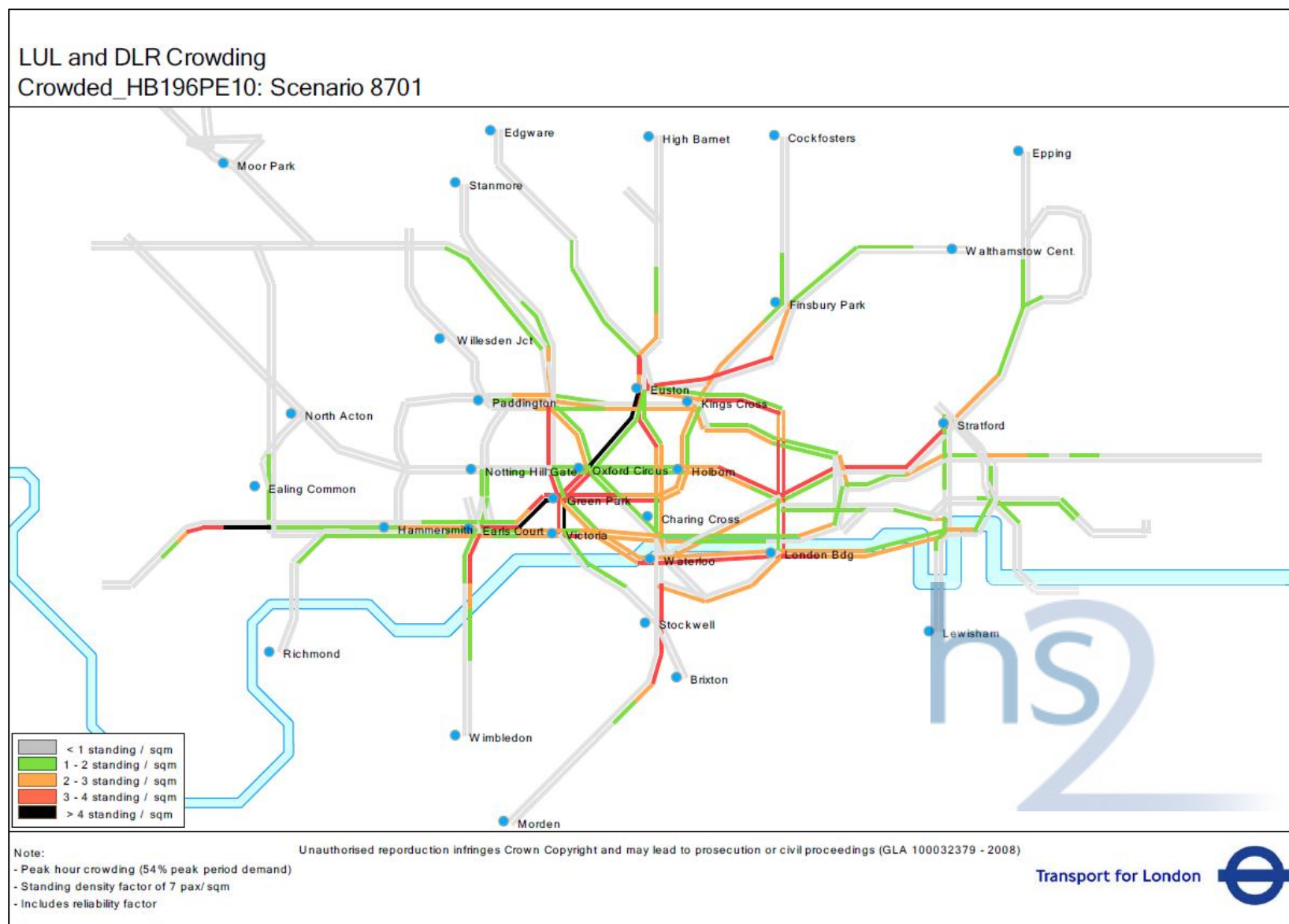


Figure 6-128: NR crowding - 2026 future baseline PM peak period (16:00-19:00)

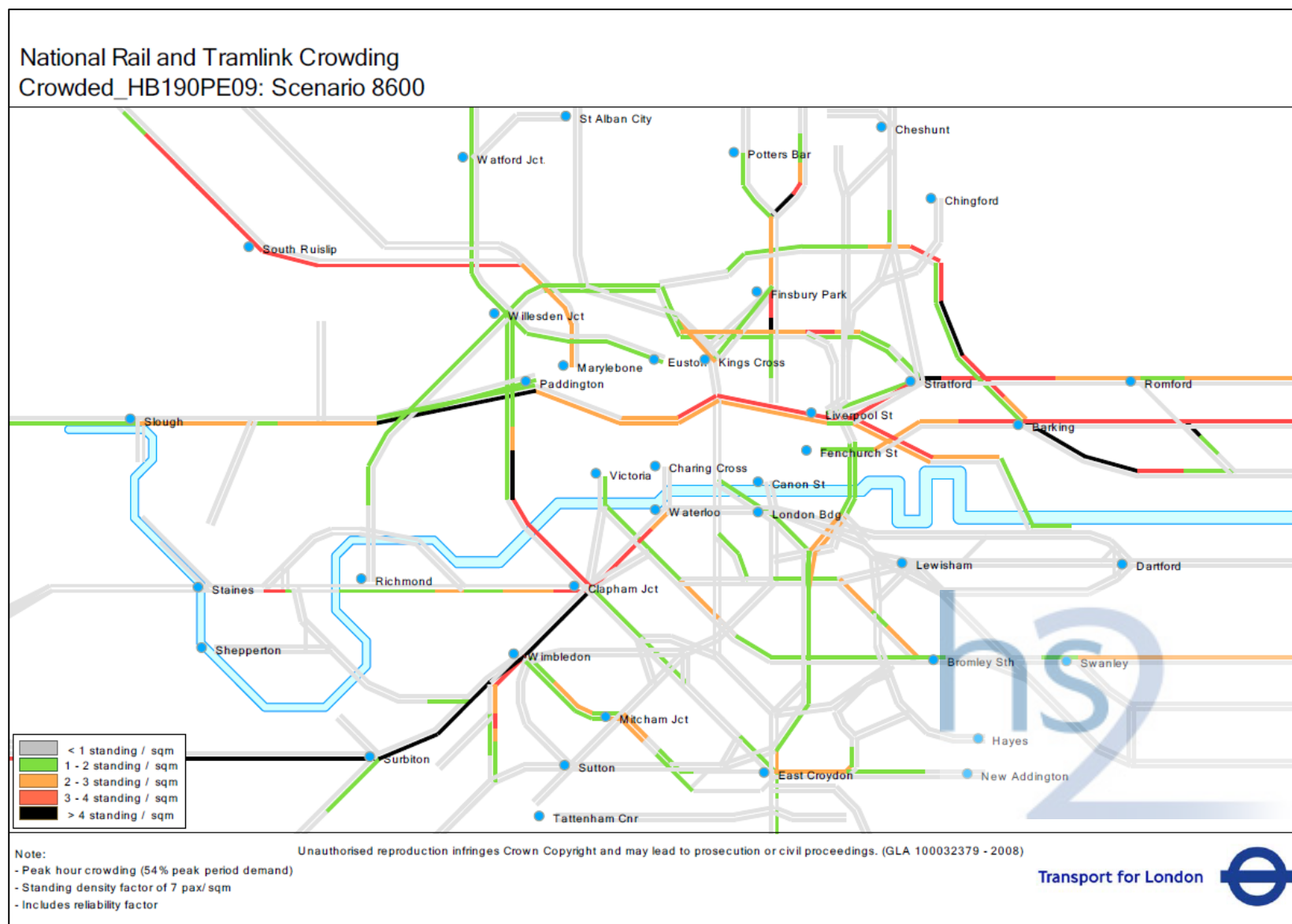
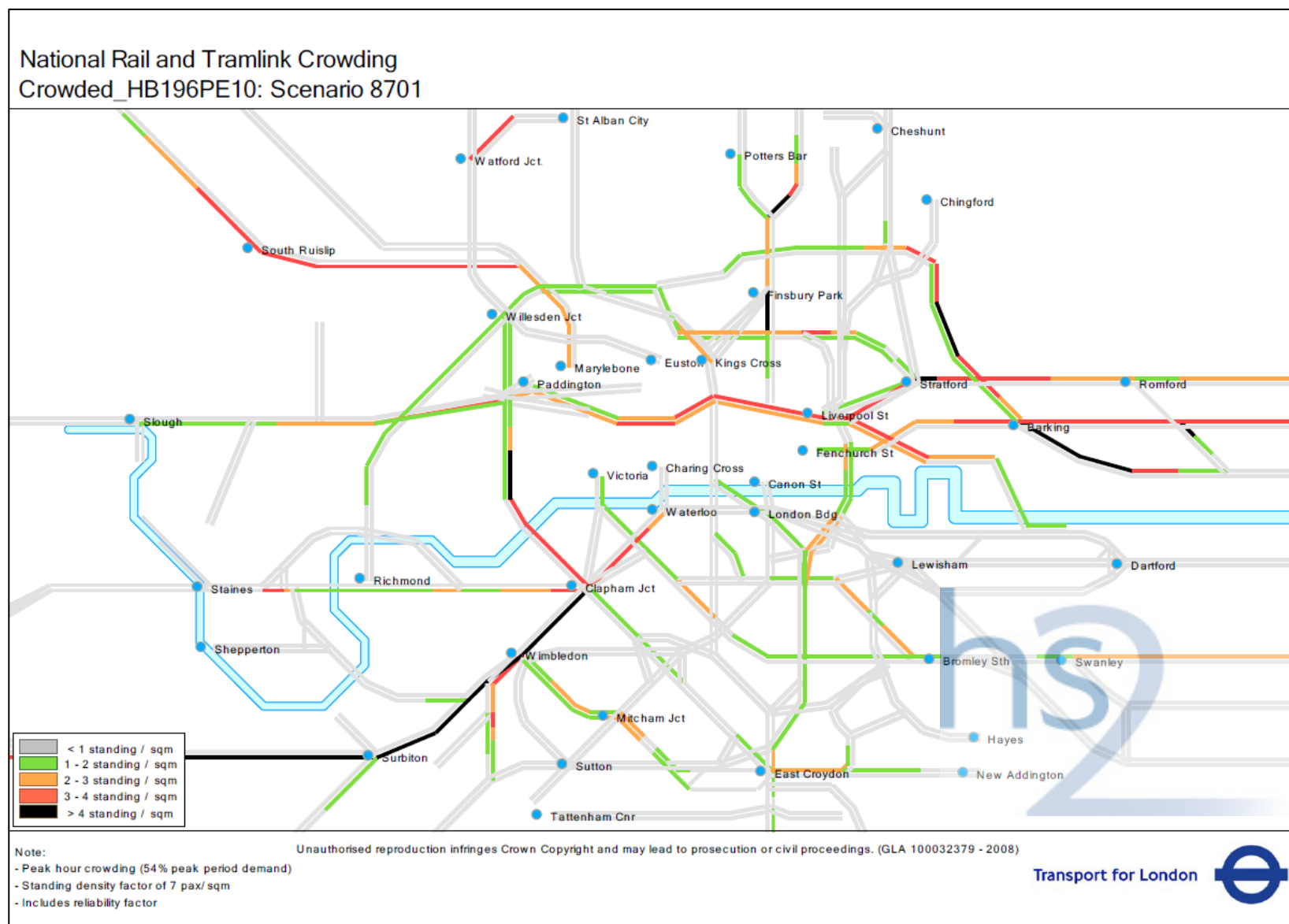
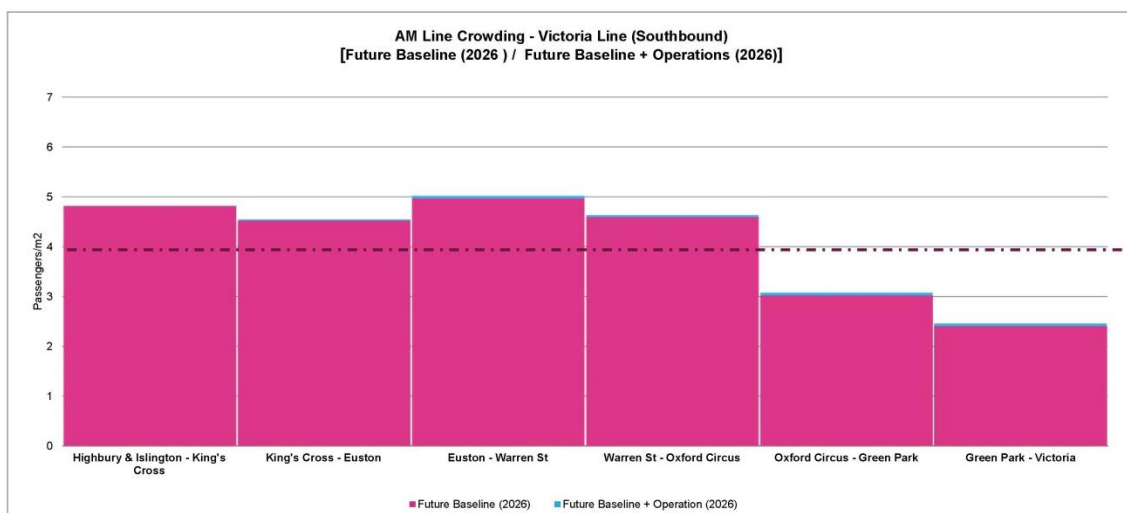


Figure 6-129: NR crowding - 2026 HS2 Phase One PM peak period (16:00-19:00)



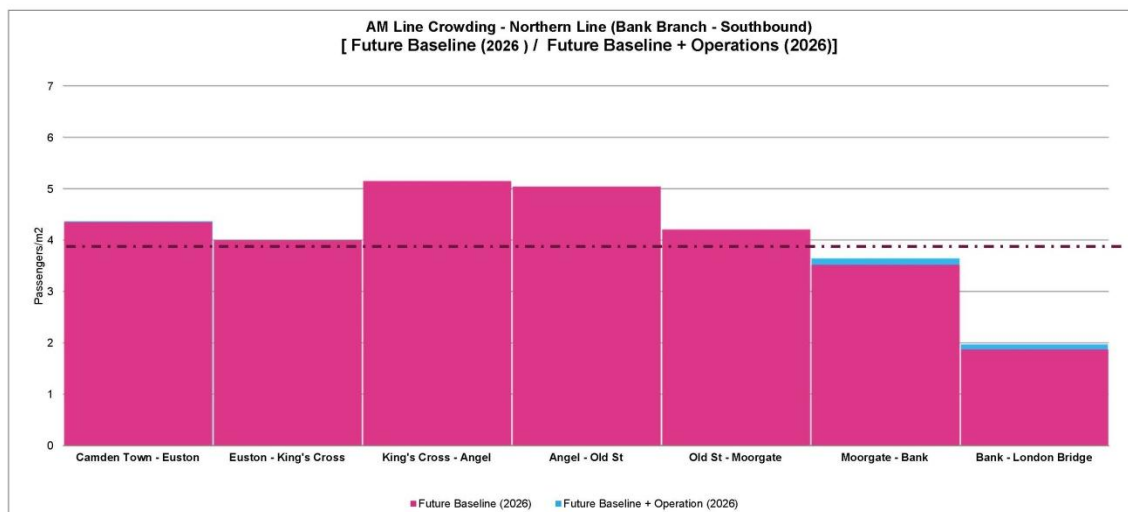
- 6.6.74 This analysis of the PM peak period indicates that the AM peak period patterns on NR services are broadly replicated in the opposite direction.
- 6.6.75 In order to assess the changes in crowding in more detail, a station to station analysis has been undertaken for the Northern Line (Bank and Charing Cross branches), Victoria Line, sub-surface (Metropolitan, Circle and Hammersmith & City) lines and the Piccadilly Line which offers an alternative north-east to south-west route to the Victoria Line. The analysis compared crowding for the 2026 future baseline with that of the 'with HS2' scenario and relates this to a practical capacity of 4 PPSM.
- 6.6.76 Figure 6-130 shows the station to station analysis on the Victoria Line in the southbound direction during the AM peak period.

Figure 6-130: 2026 Victoria Line southbound crowding per train - AM peak period (07:00-10:00)



- 6.6.77 During the AM peak period, crowding on certain sections of the Victoria Line (Highbury & Islington to Oxford Circus) will be close to 5 PPSM during the 2026 future baseline scenario. The Proposed Scheme does not result in a substantial increase in crowding on the southbound Victoria Line, given the high levels of crowding already experienced during the future baseline scenario.
- 6.6.78 Figure 6-131 shows the station to station analysis on the Northern Line Bank branch in the southbound direction during the AM peak period. The analysis shows that crowding on the Northern Line Bank branch is above 4 PPSM between Camden Town and King's Cross and above 5 PPSM between King's Cross and Old Street for the 2026 future baseline scenario.

Figure 6-131: 2026 Northern Line Bank Branch southbound crowding per train - AM peak period (07:00-10:00)



- 6.6.79 The addition of HS2 demand will result in very little additional crowding on the Northern Line Bank branch due to the fact that trains are already crowded during the future baseline scenario. Crowding does increase between Moorgate and London Bridge by 0.1 PPSM, due to additional demand interchanging from the sub-surface lines at Moorgate.
- 6.6.80 For the Northern Line Charing Cross branch and sub-surface lines (Metropolitan, Circle and Hammersmith & City Lines), crowding levels are acceptable in the 2026 future baseline scenarios, with PPSM values generally below 3 PPSM. This is shown in Figure 6-132 for the Northern Line Charing Cross branch and Figure 6-133 for the sub-surface lines.
- 6.6.81 Most additional crowding attributable to the Proposed Scheme occurs on the eastbound sub-surface lines between Euston Square and Moorgate, where crowding levels increase by approximately 0.2 PPSM. This is because these lines experience crowding levels of less than 3 PPSM during the 2026 future baseline and are, therefore, better able to absorb additional passengers. This is reflected in the large increase in additional passengers boarding at Euston Square in the HS2 Phase One scenario.

Figure 6-132: 2026 Northern Line Charing Cross Branch southbound crowding per train - AM peak period (07:00-10:00)

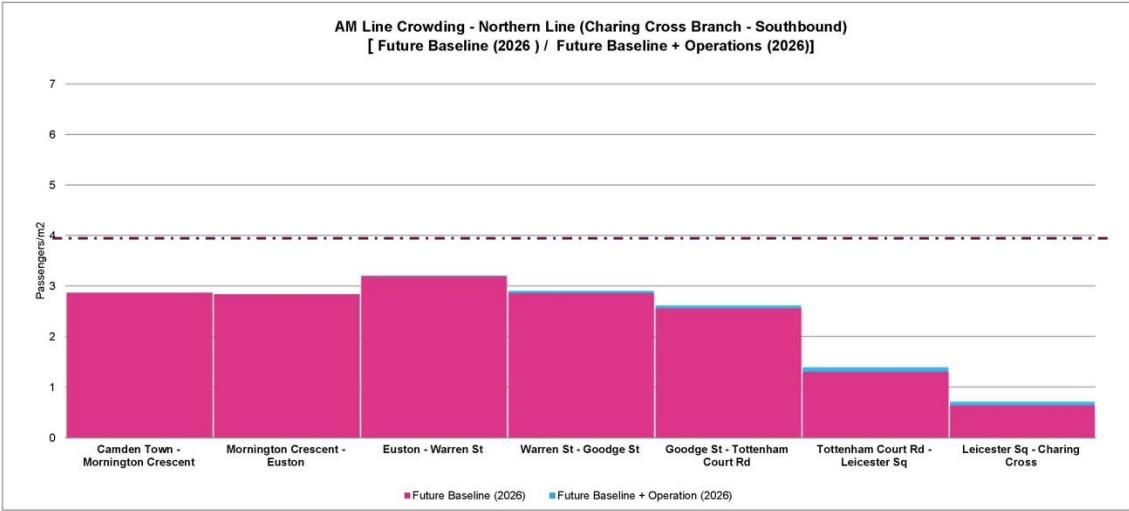
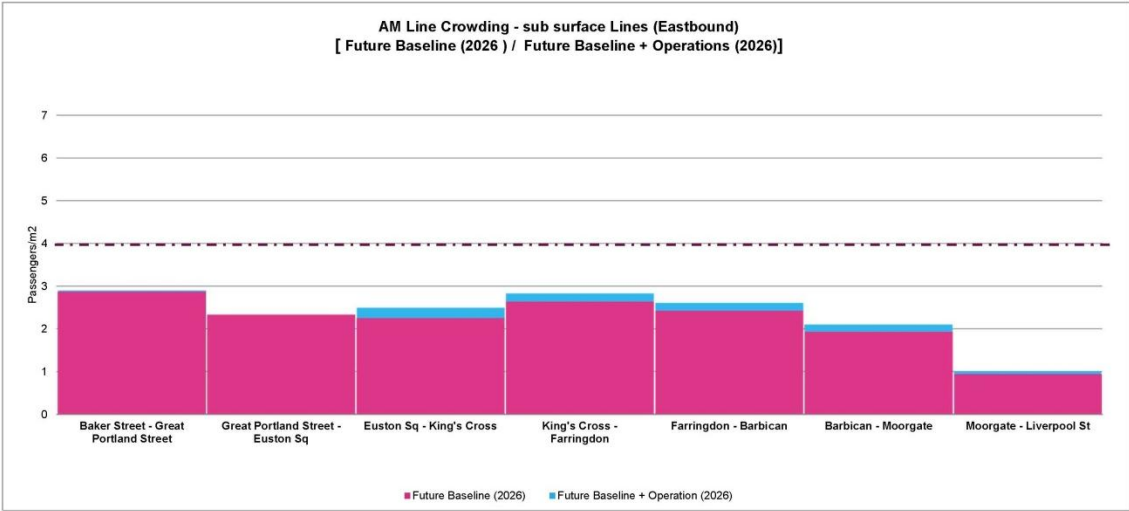
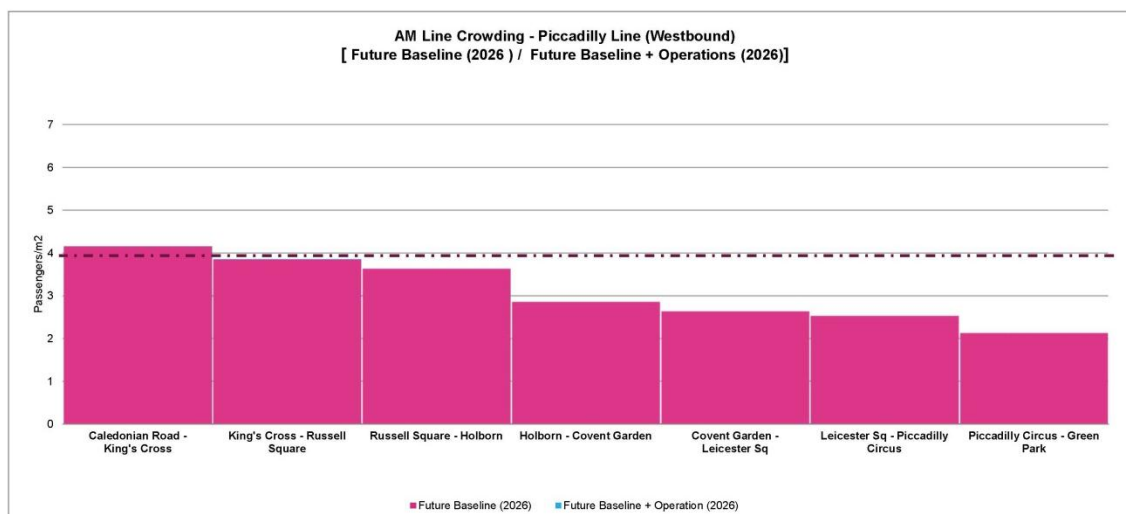


Figure 6-133: 2026 sub-surface lines eastbound crowding per train - AM peak period (07:00-10:00)



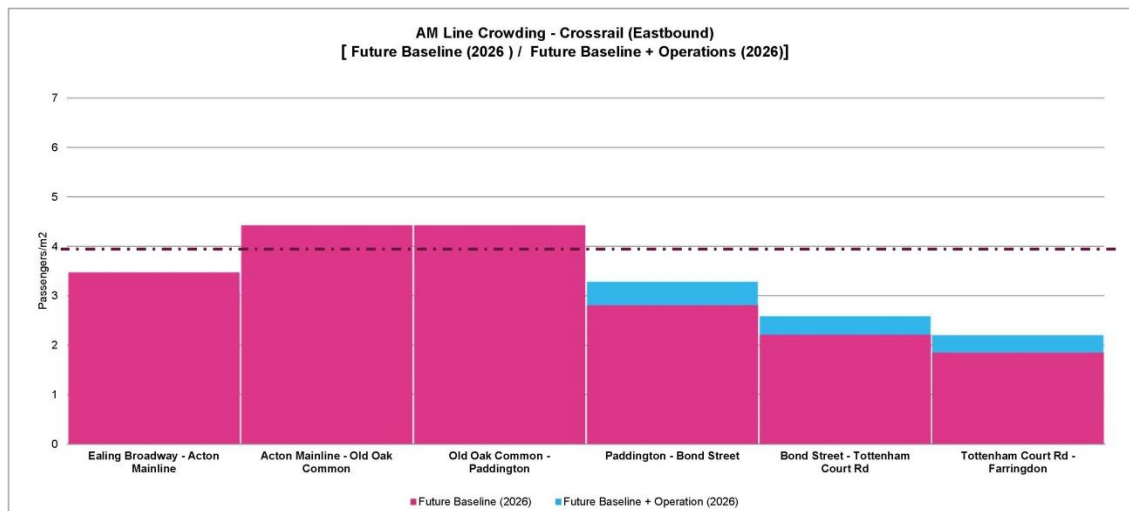
6.6.82 The Piccadilly Line shows crowding just over 4 PPSM between Caledonian Road and King's Cross, with crowding reducing gradually thereafter. This is shown in Figure 6-134. It is not anticipated that there would be any impacts on crowding on the Piccadilly Line as a result of the Proposed Scheme.

Figure 6-134: 2026 Piccadilly Line westbound crowding per train - AM peak period (07:00-10:00)



6.6.83 Crowding on Crossrail increases between Paddington and Bond Street by around 0.5 PPSM as a result of additional passenger demand associated with the Proposed Scheme boarding Crossrail at Old Oak Common. It should be noted that there is no additional crowding on Crossrail between Ealing Broadway and Paddington. In the future baseline, Crossrail runs directly between Acton Main Line and Paddington but with the Proposed Scheme, Crossrail calls additionally at Old Oak Common. Moreover, the 14 Crossrail services starting at Paddington in the future baseline are extended back to start at Old Oak Common with the Proposed Scheme. This additional capacity from Old Oak Common provided more than sufficient to accommodate the additional passengers boarding Crossrail at Old Oak Common. Additional crowding is evident as far as Farringdon but reduces by 0.3 PPSM. However, as shown on Figure 6-135, the additional demand resulting from the Proposed Scheme will not result in any additional overcrowding between Paddington and Farringdon.

Figure 6-135: 2026 Crossrail eastbound crowding per train - AM peak period (07:00-10:00)



6.6.84 For the PM peak period crowding was assessed in the opposite direction to the AM peak period, reflecting the peak crowded movements. The pattern is very similar to the AM peak period. 2026 future baseline crowding levels are generally lower than during the AM peak with the only section of line exceeding 4 PPSM being the northbound Victoria Line between Oxford Circus and Euston station. Despite this, and in common with the AM peak, the Proposed Scheme adds most additional crowding to the eastbound sub-surface lines between Moorgate and Euston Square, where crowding increases by around 0.3 PPSM. As with the AM peak, the sub-surface lines are those with the lowest level of 2026 future baseline crowding and, therefore, have spare capacity to absorb additional passengers.

6.6.85 There is also a small increase in crowding of 0.1 PPSM on the Northern Line Charing Cross branch between Charing Cross and Tottenham Court Road at which point it disappears.

6.6.86 The analysis of the crowding levels when the Proposed Scheme is in operation shows that passenger crowding will not increase on the Victoria and Northern (Bank branch) Lines at Euston station, where crowding in the future baseline scenarios is already above 4 PPSM. However, crowding will increase on the sub surface (Metropolitan, Hammersmith & City and Circle) lines but this will not increase above 4 PPSM. Due to the increase in passenger movements in the eastbound direction on the sub-surface lines, there will be a slight increase in crowding on the Northern Line Bank Branch at Moorgate as far as London Bridge.

Public transport impacts 2041

6.6.87 The impacts of HS2 Phase Two in 2041 were assessed by comparing:

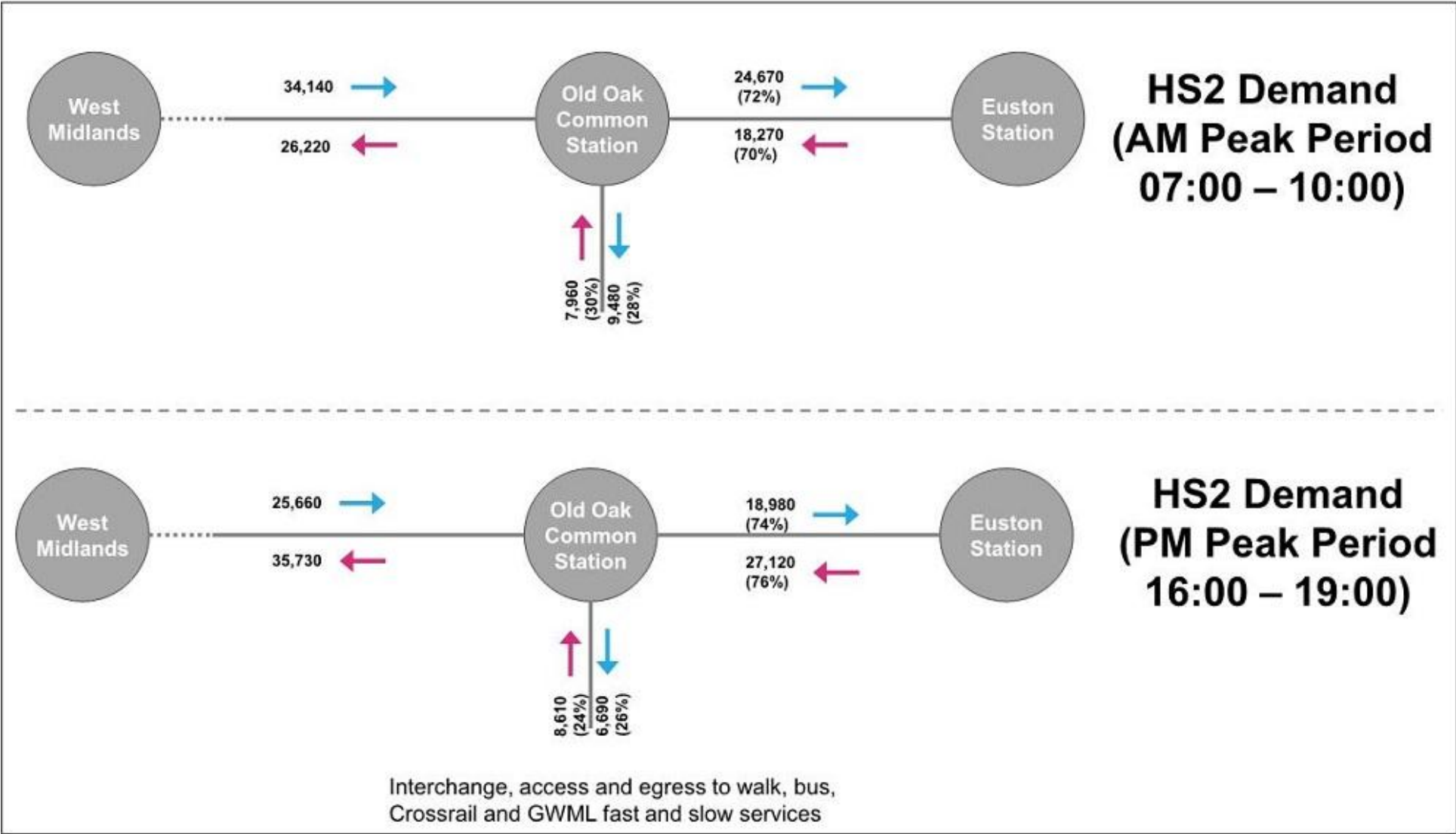
- 2041 future baseline Railplan outputs; and

- 2041 'with HS2' Railplan outputs.

Rail network 2041

- 6.6.88 Line flows in 2041 into Old Oak Common and Euston are shown in Figure 6-136. Passenger flows in the peak direction, into Euston in the AM peak and from Euston in the PM peak, are approximately 24,670 and 27,120 respectively. Counter peak flows are also relatively strong at between 18,000 and 19,000 passengers. Examination of interchange at Old Oak Common indicates that, in the AM peak, 28% of passengers from the West Midlands alight at Old Oak Common with 72% continuing on to Euston. The majority of passengers alighting at Old Oak Common are forecast to be interchanging passengers, with few passengers entering or exiting the station. In the counter peak direction, around 70% of HS2 passengers board at Euston, with 30% boarding at Old Oak Common.
- 6.6.89 In the PM peak period, approximately 76% of HS2 passengers board at Euston, with 24% boarding at Old Oak Common. In the counter peak direction, around 26% of passengers from the West Midlands alight at Old Oak Common with 74% continuing on to Euston.

Figure 6-136: HS2 demand and interchange at Old Oak Common (2041)



Euston and Old Oak Common station demand

6.6.90 Station usage has been examined to assess the impact of the Proposed Scheme on Euston station. Table 6-122 summarises the AM peak period station demand for Euston in 2041 for both the future baseline and for HS2 Phase Two in 2041. This indicates a transfer of demand from rail arrivals and departures on inter-city services to HS2 services for HS2 Phase Two in 2041 of around 15,400 passengers, countered by a small increase in suburban arrivals and departures of approximately 2,950 passengers. Overall, including HS2, arrivals in the AM peak period increase by around 20,320 (56% increase) and departures by around 10,140 (70% increase).

Table 6-122: 2041 AM peak period (07:00-10:00) Euston station NR demand

Description	2041 baseline			2041 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston NR						
Euston suburban (departing)	3,750	-	3,750	4,070	-	4,070
Euston suburban (arriving)	-	21,980	21,980	-	24,610	24,610
Euston Intercity (departing)	10,790	-	10,790	2,340	-	2,340
Euston Intercity/other (arriving)	-	14,100	14,100	-	7,130	7,130
Euston HS2 (arriving)	-	-	-	-	24,670	24,670
Euston HS2 (departing)	-	-	-	18,270	-	18,270
Sub-total: Euston NR	14,540	36,080	50,620	24,680	56,400	81,080
Old Oak Common (OOC)						
OOC NR (departing slow services)	-	-	-	4,020	10,180	14,200
OOC NR slow (arriving slow services)	-	-	-	25,270	7,910	33,180
OOC NR (departing fast services)	-	-	-	7,280	-	7,280
OOC NR (arriving fast services)	-	-	-	-	17,370	17,370
OOC HS2 (arriving)	-	-	-	-	9,480	9,480
OOC HS2 (departing)	-	-	-	7,960	-	7,960
Sub-total: OOC	-	-	-	44,530	44,940	89,470

6.6.91 The equivalent PM peak period analysis is set out in Table 6-123. This indicates a decrease in rail arrivals and departures on inter-city services in the 'with HS2' scenario of around 15,800 passengers, again countered by a small increase in suburban arrivals and departures of around 3,190 passengers. Overall, including HS2, arrivals in the PM peak period increase by around 12,140 (76% increase) and departures by around 21,340 (57% increase).

Table 6-123: 2041 PM peak period (16:00-19:00) Euston station NR demand

Description	2041 baseline			2041 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston NR						
Euston suburban (Departing)	21,080	-	21,080	23,970	-	23,970
Euston suburban (Arriving)	-	6,560	6,560	-	6,850	6,850
Euston Intercity (Departing)	16,710	-	16,710	8,040	-	8,040
Euston Intercity/other (Arriving)	-	9,380	9,380	-	2,250	2,250
Euston HS2 (Arriving)	-	-	-	-	18,980	18,980
Euston HS2 (Departing)	-	-	-	27,120	-	27,120
Sub-total: Euston NR	37,790	15,940	53,730	59,130	28,080	87,210
Old Oak Common (OOC)						
OOC NR (Departing Slow Services)	-	-	-	11,040	27,270	38,310
OOC NR Slow (Arriving Slow Services)	-	-	-	12,730	3,990	16,720
OOC NR (Departing Fast Services)	-	-	-	15,280	-	15,280
OOC NR (Arriving Fast Services)	-	-	-	-	9,500	9,500
OOC HS2 (Arriving)	-	-	-	-	6,690	6,690
OOC HS2 (Departing)	-	-	-	8,610	-	8,610
Sub-total: OOC	-	-	-	47,660	47,450	95,110

Underground station demand

6.6.g2 Station usage has been examined to assess the impact of the Proposed Scheme on Euston and Euston Square LU stations. Table 6-124 and Table 6-125 summarise the AM peak period and PM peak period station demand for Euston in 2041 for both the future baseline and HS2 Phase Two scenarios respectively.

Table 6-124: 2041 AM peak period (07:00-10:00) Euston station NR demand

Description	2041 baseline			2041 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston LU						
Northern Line Charing Cross Branch (northbound)	2,110	2,300	4,410	2,330	4,240	6,570
Northern Line Charing Cross Branch (southbound)	6,790	1,720	8,510	9,090	2,550	11,640
Northern Line Bank Branch (northbound)	3,980	4,010	7,990	4,170	3,820	7,990
Northern Line Bank Branch (southbound)	8,880	7,820	16,700	9,240	8,240	17,480
Victoria Line (northbound)	3,110	10,760	13,870	3,620	9,920	13,540
Victoria Line (southbound)	11,100	4,300	15,400	12,890	5,340	18,230

Description	2041 baseline			2041 'with HS2'		
Sub-total: Euston LU	35,970	30,900	66,870	41,340	34,110	75,450
Euston Square LU						
Metropolitan Line (northbound/westbound)	1,360	5,410	6,770	3,590	8,880	12,470
Metropolitan Line (southbound/eastbound)	4,550	6,210	10,760	11,850	8,300	20,150
Sub-total: Euston Square LU	5,900	11,620	17,520	15,440	17,180	32,620

Table 6-125: 2041 PM peak period (16:00-19:00) Euston station NR demand

Description	2041 baseline			2041 'with HS2'		
	Board	Alight	Total	Board	Alight	Total
Euston LU						
Northern Line Charing Cross Branch (northbound)	2,980	5,720	8,700	3,990	7,660	11,650
Northern Line Charing Cross Branch (southbound)	5,150	2,140	7,290	8,290	2,620	10,910
Northern Line Bank Branch (northbound)	6,510	6,360	12,870	6,710	5,820	12,530
Northern Line Bank Branch (southbound)	4,770	5,190	9,960	4,710	5,560	10,270
Victoria Line (northbound)	3,930	14,710	18,640	4,320	16,550	20,870
Victoria Line (southbound)	8,970	3,670	12,640	11,200	4,270	15,470
Sub-total: Euston LU	32,320	37,780	70,100	39,200	42,480	81,680
Euston Square LU						
Metropolitan Line (northbound/westbound)	3,770	6,670	10,450	5,330	14,490	19,820
Metropolitan Line (southbound eastbound)	5,570	4,290	9,860	8,270	7,660	15,930
Sub-total: Euston Square LU	9,350	10,960	20,310	13,600	22,150	35,750

- 6.6.93 The increase in NR and HS2 boarders and alighters at Euston station with HS2 Phase Two in 2041 results in an increase in LU passenger demand. During the AM peak, the change in LU boarders is greatest on the Northern Line Charing Cross branch with an increase of just over 2,300 Southbound (increase of 34%). Boarders on the southbound Victoria Line increase by approximately 1,790, an increase of 16%.
- 6.6.94 There is a substantial increase in boarders and alighters at Euston Square station, with an increase of 5,700 passengers in the westbound direction and 9,390 passengers in the eastbound direction during the AM peak period.

Impact on zone 1 stations

6.6.95 Table 6-126 shows the impact of the Proposed Scheme on stations within (fare) Zone 1, together with Camden Town, Mornington Crescent and Ealing Broadway stations, during the 2041 AM peak period. The impacts are shown in decreasing order of absolute change in number of access, egress and interchange passengers. Any station within Zone 1 with a change of less than +/- 100 passengers has been excluded from Table 6-126.

Table 6-126: 2041 access, egress and interchange trips at Zone 1 LU stations - AM peak period (07:00-10:00)

Station	2041 baseline	2041 'with HS2'	Absolute difference	Relative difference
Euston (including Euston Square)	89,130	114,720	25,590	29%
Liverpool Street	121,860	123,450	1,590	1%
Bond Street	66,330	67,790	1,460	2%
Baker Street	39,090	40,200	1,110	3%
London Bridge	170,550	171,500	950	1%
Waterloo	143,350	144,310	960	1%
Victoria	145,580	146,430	850	1%
Farringdon	69,570	70,400	830	1%
Moorgate	35,140	35,530	390	1%
Charing Cross	41,120	41,480	360	1%
Green Park	55,800	56,150	350	1%
Marble Arch	6,290	6,620	330	5%
Embankment	29,620	29,940	320	1%
Warren Street	16,620	16,930	310	2%
Aldgate	15,040	15,340	300	2%
St. James's Park	18,380	18,630	250	1%
Cannon Street	44,090	44,320	230	1%
Gloucester Road	11,960	12,180	220	2%
Pimlico	15,450	15,640	190	1%
Barbican	7,600	7,790	190	2%
Holborn	33,300	33,490	190	1%
Angel	19,640	19,810	170	1%
Aldgate East	15,170	15,340	170	1%
Notting Hill Gate	11,780	11,920	140	1%
Leicester Square	27,320	27,440	120	0%

Station	2041 baseline	2041 'with HS2'	Absolute difference	Relative difference
Fenchurch Street	36,290	36,410	120	0%
Elephant and Castle	22,530	22,650	120	1%
Old Street	21,360	21,260	-100	0%
South Kensington	25,880	25,740	-140	-1%
Mansion House	2,820	2,680	-160	-5%
City Thameslink	22,000	21,840	-160	-1%
Regent's Park	5,690	5,500	-190	-3%
Tottenham Court Road	48,250	48,050	-200	0%
Bank	98,460	98,240	-220	0%
Lancaster Gate	2,350	2,050	-300	-13%
Goodge Street	21,400	21,090	-310	-1%
Great Portland Street	13,900	13,470	-430	-3%
Marylebone	24,370	23,410	-960	-4%
Oxford Circus	87,210	86,080	-1,130	-1%
St. Pancras	21,420	20,230	-1,190	-6%
King's Cross	63,210	55,930	-7,280	-12%
Paddington	84,670	60,040	-24,630	-29%
Sub-total	1,879,670	1,881,900	2,230	0%
Total (all Zone 1)	2,087,670	2,088,560	890	0%
Camden Road	18,430	18,390	-40	0%
Mornington Crescent	2,900	2,920	20	1%
Ealing Broadway	28,100	29,880	1,780	6%

6.6.g6 The largest increase in absolute and percentage terms in the AM peak period is Euston (including Euston Square), where station activity increases by just over 25,600 passengers, an increase of 29%.

- 6.6.97 HS2 Phase Two in 2041 will also result in a number of positive impacts at some zone 1 stations with reductions in passenger demand. The largest decrease is at Paddington (24,630 passengers or a decrease of 29%), due to the interchange at Old Oak Common onto Crossrail services. These are passengers who, in the 2041 future baseline, would have interchanged between GWML (fast) services and Crossrail at Paddington. However, with HS2 Phase Two in operation, these passengers make the same interchange earlier at Old Oak Common, combined with HS2 passengers alighting at Old Oak Common and boarding Crossrail, rather than continuing on HS2 to Euston.
- 6.6.98 The main difference between the 2041 and 2026 assessments is a reduction of 7,280 passengers (-12%) using King's Cross. This is a direct consequence of long distance passengers previously travelling from Leeds (and points north), transferring onto HS2 services from Leeds to Euston.
- 6.6.99 The impacts on other Zone 1 stations are relatively small, with the exception of some Crossrail stations with increases in activity at Liverpool Street. Outside Zone 1, Ealing Broadway has a large increase in activity of 1,780 or 6%, as it offers good connections to Old Oak Common and the Proposed Scheme. Total activity at all Zone 1 stations is unchanged.
- 6.6.100 A similar pattern is evident for the PM peak period, as shown in Table 6-127, with an increase of around 28,450 (30%) at Euston and a reduction of 26,510 (30%) at Paddington. Crossrail stations (Paddington, Bond Street, Farringdon and Liverpool Street) experience an increase in station activity for those reasons set out for the AM peak period.

Table 6-127: 2041 access, egress and interchange trips at Zone 1 LU stations - PM peak period (16:00-19:00)

Station	2041 baseline	2041 'with HS2'	Absolute difference	Relative difference
Euston (including Euston Square)	96,350	124,800	28,450	30%
Bond Street	89,490	92,200	2,710	3%
Waterloo	148,710	150,480	1,770	1%
Victoria	156,270	157,610	1,340	1%
Farringdon	76,700	77,700	1,000	1%
Liverpool Street	108,810	109,750	940	1%
Moorgate	31,050	31,910	860	3%
Baker Street	56,320	56,850	530	1%
Embankment	40,550	41,050	500	1%
London Bridge	116,790	117,220	430	0%
St James's Park	14,560	14,930	370	3%
Gloucester Road	14,860	15,230	370	2%

Station	2041 baseline	2041 'with HS2'	Absolute difference	Relative difference
Charing Cross	46,160	46,490	330	1%
Borough	8,660	8,930	270	3%
Pimlico	19,630	19,890	250	1%
Regent's Park	8,050	8,290	240	3%
Angel	20,410	20,650	240	1%
Leicester Square	41,970	42,200	230	1%
Green Park	77,410	77,600	190	0%
Aldgate	17,580	17,770	190	1%
Barbican	8,550	8,720	170	2%
Old Street	15,620	15,770	150	1%
Westminster	38,310	38,450	160	0%
Edgware Road (District, Circle and Hammersmith & City Lines)	11,410	11,540	130	1%
Mornington Crescent	3,250	3,350	100	3%
Mansion House	2,610	2,710	100	4%
Blackfriars	21,050	20,950	-100	-1%
Temple	20,830	20,700	-130	-1%
Queensway	4,870	4,740	-130	-3%
South Kensington	38,400	38,200	-200	-1%
Lancaster Gate	3,400	3,180	-220	-6%
Holborn	32,530	32,310	-220	-1%
Covent Garden	11,180	10,930	-250	-2%
Camden Town	30,100	29,660	-440	-1%
City Thameslink	18,060	17,590	-470	-3%
Bank	98,430	97,900	-530	-1%
St. Pancras	23,600	22,860	-740	-3%
Goodge Street	20,180	19,420	-760	-4%
Marylebone	26,380	25,590	-790	-3%
Great Portland Street	16,870	16,060	-810	-5%
Oxford Circus	106,330	105,210	-1,120	-1%
Tottenham Court Road	62,990	61,800	-1,190	-2%
King's Cross	68,100	58,800	-9,300	-14%
Paddington	88,350	61,840	-26,510	-30%

Station	2041 baseline	2041 'with HS2'	Absolute difference	Relative difference
Sub-total	1,989,530	1,988,950	-580	0%
Total (all Zone 1)	2,230,260	2,229,570	-690	0%
Camden Road	30,100	29,660	-440	-1%
Mornington Crescent	3,250	3,350	100	3%
Ealing Broadway	27,810	29,100	1,290	5%

Impact on Passenger flows

6.6.101 The impact of the Proposed Scheme on the NR services can be seen in Table 6-128 and in Figure 6-137 and Figure 6-138 for the AM and PM peak periods respectively.

Table 6-128: 2041 passenger flows (AM and PM peak periods) NR

Service	Direction	AM peak period (07:00-10:00)			PM peak period (16:00-19:00)		
		2041 baseline	2041 'with HS2'	% difference	2041 baseline	2041 'with HS2'	% difference
Conventional suburban	Inbound	21,980	24,610	12%	6,560	6,854	5%
	Outbound	3,750	4,070	9%	21,080	23,972	14%
Conventional inter-city	Inbound	14,100	7,130	-49%	9,380	2,253	-76%
	Outbound	10,790	2,340	-78%	16,710	8,039	-52%
HS2 at Euston	Inbound	-	24,670	-	-	18,976	-
	Outbound	-	18,270	-	-	27,121	-
HS2 at Old Oak Common	Inbound	-	34,140	-	-	25,664	-
	Outbound	-	26,220	-	-	35,729	-
GWML slow/Crossrail (Acton to OOC)	Eastbound	24,880	31,490	27%	14,390	16,070	12%
	Westbound	13,020	14,040	8%	24,290	30,360	25%
GWML fast (OOC to Paddington (IC))	Eastbound	35,170	18,110	-48%	17,750	8,980	-49%
	Westbound	13,800	7,780	-44%	33,180	17,140	-48%
GWML slow (OOC to Paddington (ML))	Eastbound	4,850	1,470	-70%	1,100	400	-64%
	Westbound	-	-	-	3,170	610	-81%

Figure 6-137: 2041 impacts on NR - AM peak period (07:00-10:00)

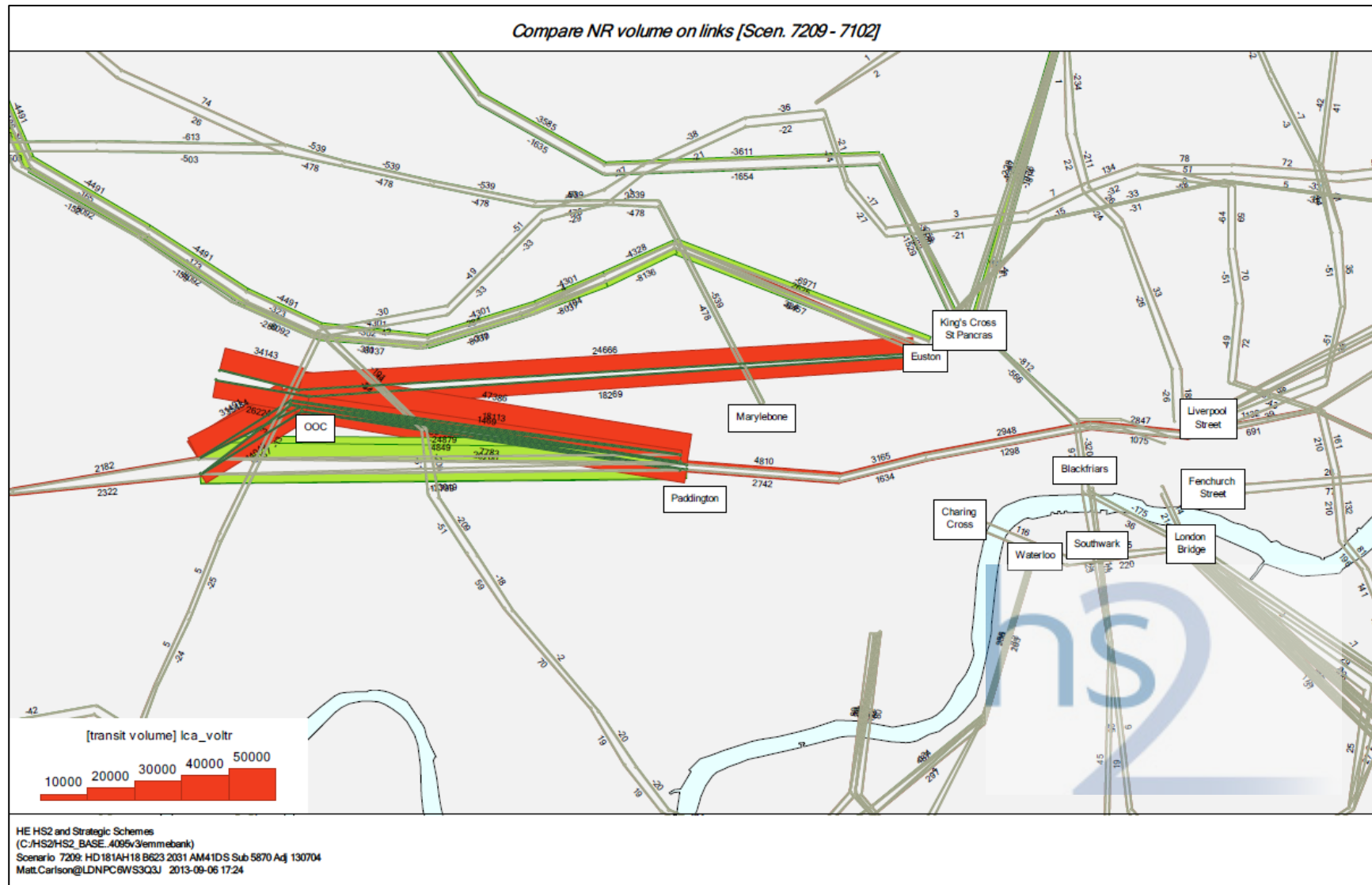
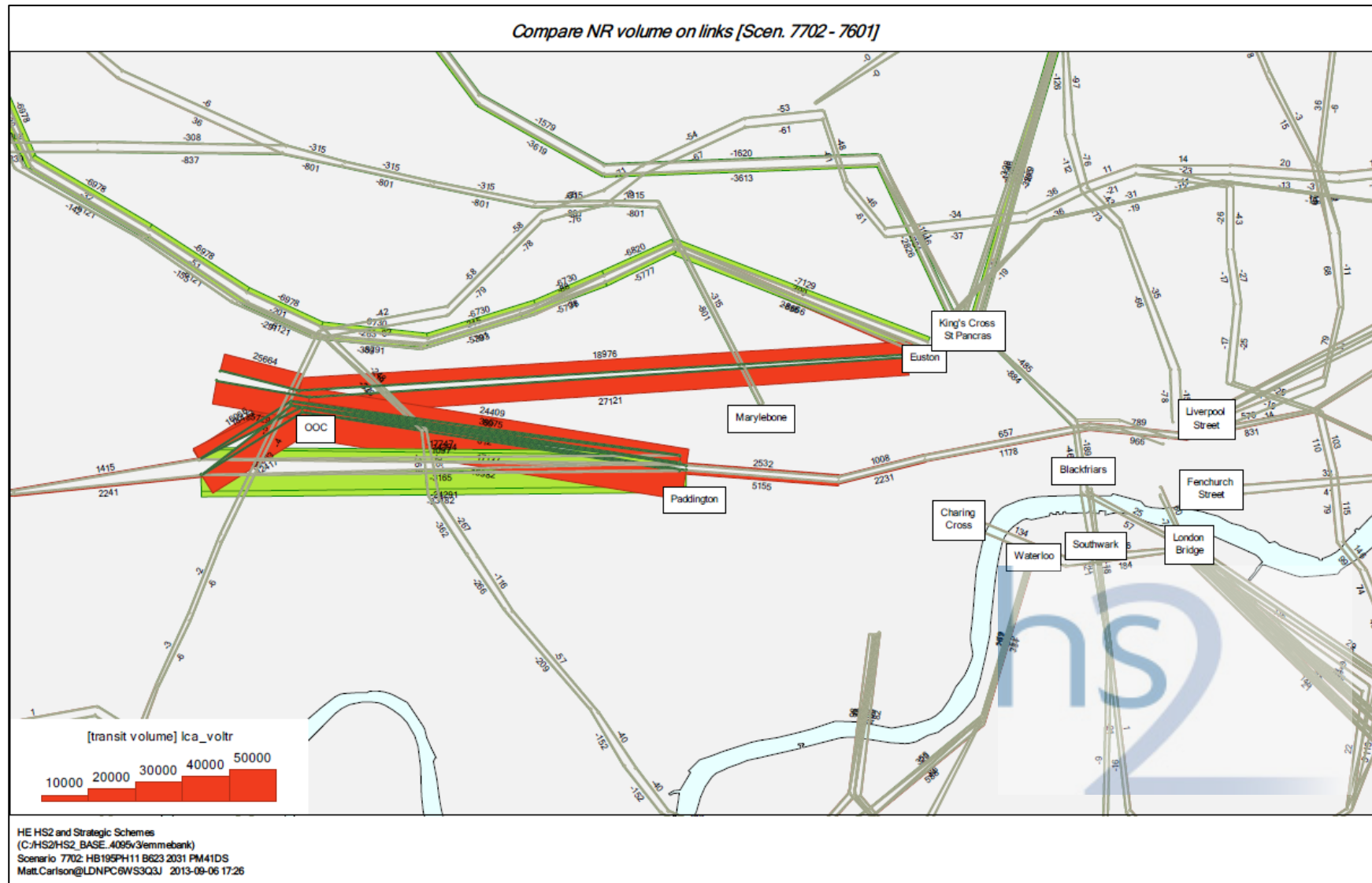


Figure 6-138: 2041 impacts on NR - PM peak period (16:00-1900)



- 6.6.102 A feature of the AM flows at Old Oak Common is the availability of interchange between GWML (fast) eastbound services and GWML (slow) or Crossrail eastbound services. The attractiveness of this option results in increases in passenger flows on the GWML and Crossrail services between Old Oak Common and Paddington. The pattern is repeated in the PM peak period with a high level of interchange between westbound GWML slow/Crossrail services and westbound fast GWML services.
- 6.6.103 Figure 6-137 and Figure 6-138 show the increases in passenger loadings along the HS2 corridor with passenger transferring from the existing NR corridor. The increases in passenger loadings into and out of Paddington station are also shown. This is directly associated with the interchange between GWML and Crossrail services at Old Oak Common.
- 6.6.104 The impact of the Proposed Scheme on passenger flows in 2041, to and from Euston station and Euston Square station for LU, and on Crossrail and London Overground (North London Line (NLL) and West London Line (WLL)) services, are set out in Table 6-129 and shown in Figure 6-139 and Figure 6-140 for the AM and PM peak period respectively. On Figure 6-139 and Figure 6-140, the red bars represent an increase in demand while the green bars represent a decrease in demand.

Table 6-129: 2041 passenger flows (AM and PM peak periods) underground

Service	Direction	AM peak period (07:00-10:00)			PM peak period (16:00-19:00)		
		2041 baseline	2041 'with HS2'	% difference	2041 baseline	2041 'with HS2'	% difference
Victoria Line (north of Euston)	Northbound	26,800	26,530	-1%	63,170	62,470	-1%
	Southbound	67,080	66,700	-1%	35,710	34,240	-4%
Victoria Line (south of Euston)	Northbound	34,440	32,830	-5%	73,940	74,700	1%
	Southbound	73,890	74,250	0%	41,030	41,170	0%
Northern Line Bank branch (north of Euston)	Northbound	21,170	21,440	1%	35,280	35,470	1%
	Southbound	39,030	39,030	0%	25,290	26,110	3%
Northern Line Bank branch (south of Euston)	Northbound	21,210	21,090	-1%	35,130	34,590	-2%
	Southbound	40,090	40,020	0%	24,880	25,260	2%
Northern Line CC branch (north of Euston)	Northbound	12,550	12,630	1%	32,170	32,190	0%
	Southbound	35,630	35,810	1%	22,890	22,090	-4%
Northern Line CC branch (south of Euston)	Northbound	12,740	14,540	14%	34,900	35,870	3%
	Southbound	40,700	42,350	4%	25,900	27,760	7%
Metropolitan, H&C and Circle Lines (west of Euston Square)	Eastbound	36,360	35,860	-1%	37,660	38,260	2%
	Westbound	32,920	33,380	1%	33,020	32,380	-2%
Metropolitan, H&C and Circle Lines (east of Euston Square)	Eastbound	34,710	39,400	14%	38,940	38,870	0%
	Westbound	36,970	38,670	5%	35,930	41,550	16%
Crossrail OOC to Paddington	Eastbound	24,880	47,390	90%	14,390	24,410	70%
	Westbound	13,020	20,200	55%	24,290	45,980	89%
Crossrail Paddington to Bond Street	Eastbound	47,370	52,180	10%	29,260	31,790	9%
	Westbound	22,670	25,420	12%	45,180	50,330	11%
Crossrail Bond Street to Tottenham Court Road	Northbound	40,560	43,720	8%	48,840	49,850	2%
	Southbound	42,190	43,820	4%	47,160	49,390	5%
NLL Acton to Willesden Junction	Northbound	1,160	1,170	0%	2,630	2,630	0%
	Southbound	1,610	1,600	-1%	970	970	0%
WLL Shepherds Bush to Willesden Junction	Eastbound	3,010	3,010	0%	3,300	3,260	-1%
	Westbound	4,010	4,000	0%	3,120	3,100	-1%

Figure 6-139: 2041 impacts on LU - AM peak period (07:00-10:00)

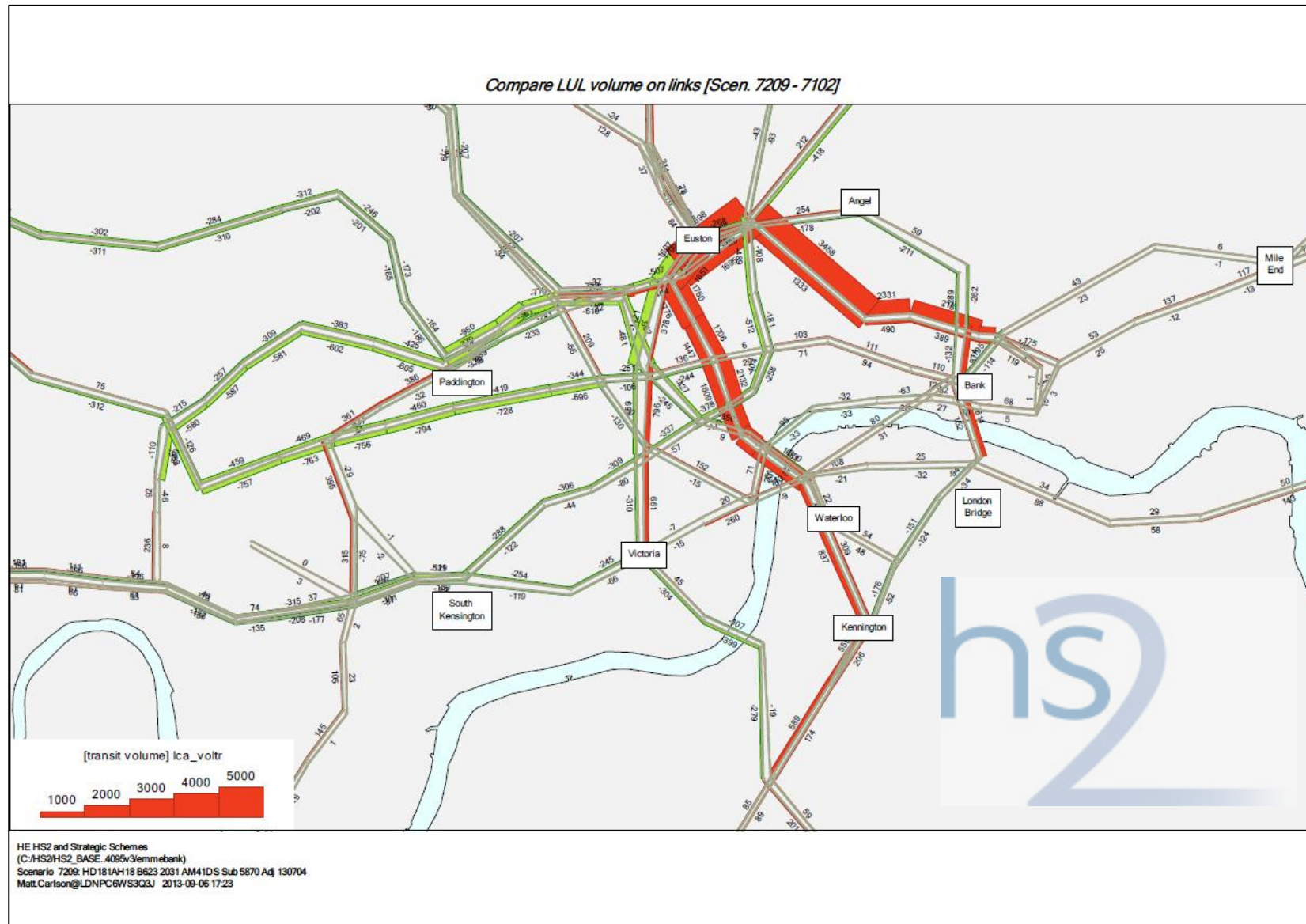
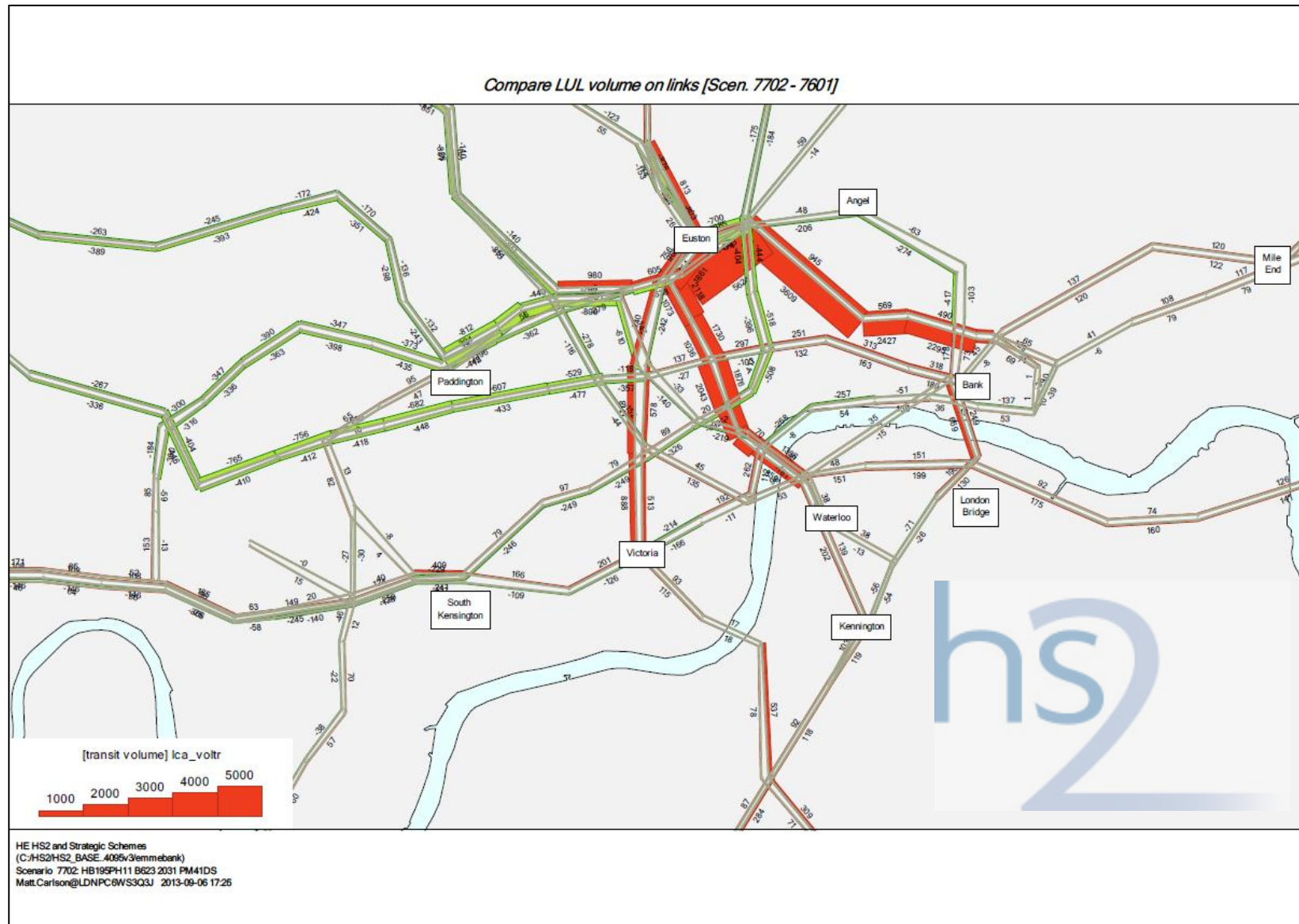


Figure 6-140: 2041 impacts on London Underground - PM peak period (16:00-19:00)



- 6.6.105 The greatest flow changes are on the sub-surface lines (Metropolitan, Circle and Hammersmith & City Lines) east of Euston, particularly between Euston Square and King's Cross, with an increase of 4,700 (+14%) passengers in the eastbound direction in the AM peak and an increase of 5,620 (+16%) passengers westbound direction in the PM peak. This is a combination of the improved connectivity between Euston and Euston Square and high levels of crowding on the lines to and from Euston, compared with spare capacity on the sub-surface lines.
- 6.6.106 Crossrail shows substantial increases with HS2 Phase Two in 2041, in the eastbound direction in the AM peak and in the westbound direction in the PM peak between Oak Common and Paddington due to extension of services previously starting at Paddington back to Old Oak Common. These increases occur as a result of passengers interchanging between HS2 and GWML services at Old Oak Common. Crossrail also shows net increases of around 10% in each direction and each time period between Paddington and Bond Street, although these impacts gradually decrease further east. Further details on crowding on Crossrail services are provided in the following section. Figure 6-139 and Figure 6-140 also show the secondary impact of the level of interchange available between the Proposed Scheme and GWML and Crossrail services at Old Oak Common. The attractiveness of this route results in flow reductions on the sub-surface lines (Metropolitan, Circle and Hammersmith & City Lines) from Paddington and on the Central Line, particularly between White City and Oxford Circus.

Impact on crowding levels

- 6.6.107 Figure 6-141 to Figure 6-144 show AM peak crowding on the NR and LU during the 2041 future baseline and with HS2 Phase Two. The analysis shows:
- An increase from less than 3 - 4 PPSM to greater than 4 PPSM northbound on the Northern Line Charing Cross branch in the northbound direction between Warren street and Euston;
 - An increase from less than 2 - 3 PPSM to 3 - 4 PPSM in the eastbound direction on the sub-surface lines (Metropolitan, Hammersmith & City and Circle Lines) between King's Cross and Barbican;
 - A reduction in crowding on GWML services into Paddington from greater than 4 PPSM to 3 - 4 PPSM;
 - A reduction in crowding from 3 - 4 PPSM to 2-3 PPSM on southbound Thameslink services into King's Cross; and
 - A reductions in crowding on the WCML between Watford Junction and Euston (2 - 3 PPSM to 1 - 2 PPSM) and an increase in crowding on the Abbey Line between St. Albans City and Watford Junction (2 - 3 PPSM to greater than 4 PPSM).

- 6.6.108 The reductions in crowding are a positive impact of the Proposed Scheme due to the level of interchange with HS2 services available with GWML and Crossrail services at Old Oak Common.

Figure 6-141: London Underground crowding – 2041 future baseline AM peak period (07:00-10:00)

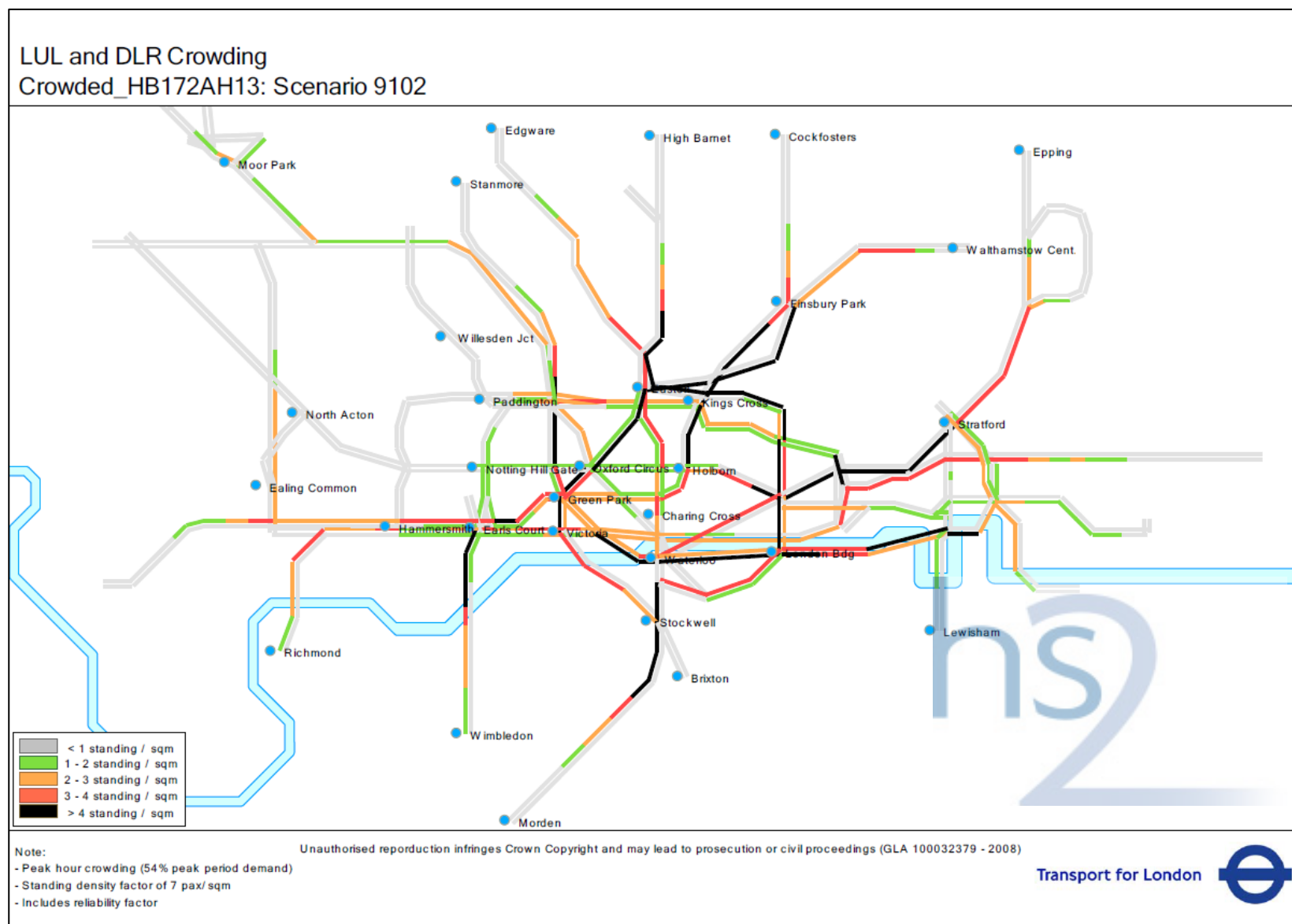


Figure 6-142: London Underground crowding – 2041 HS2 Phase Two AM peak period (07:00-10:00)

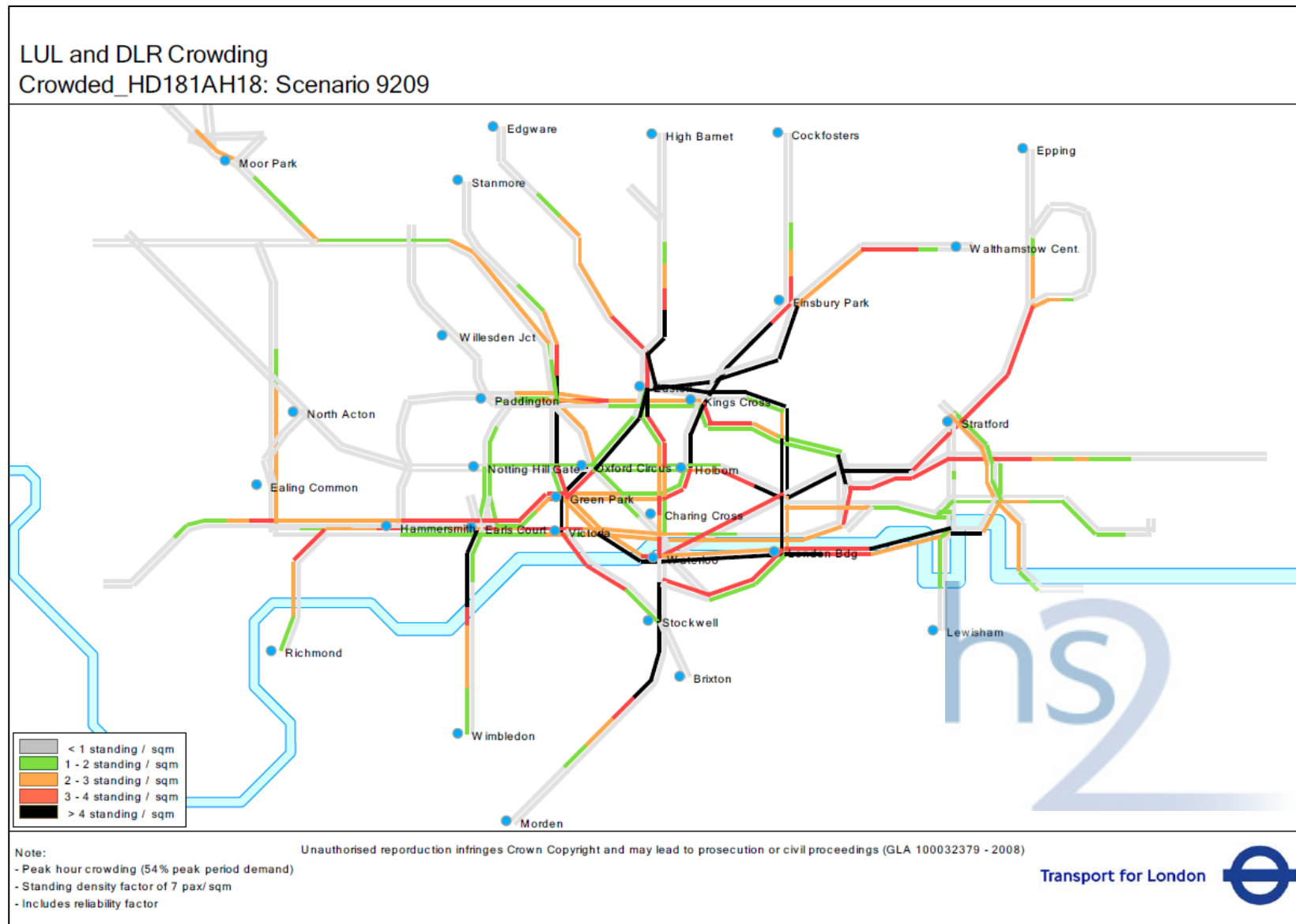


Figure 6-143: NR crowding - 2041 future baseline AM peak period (07:00-10:00)

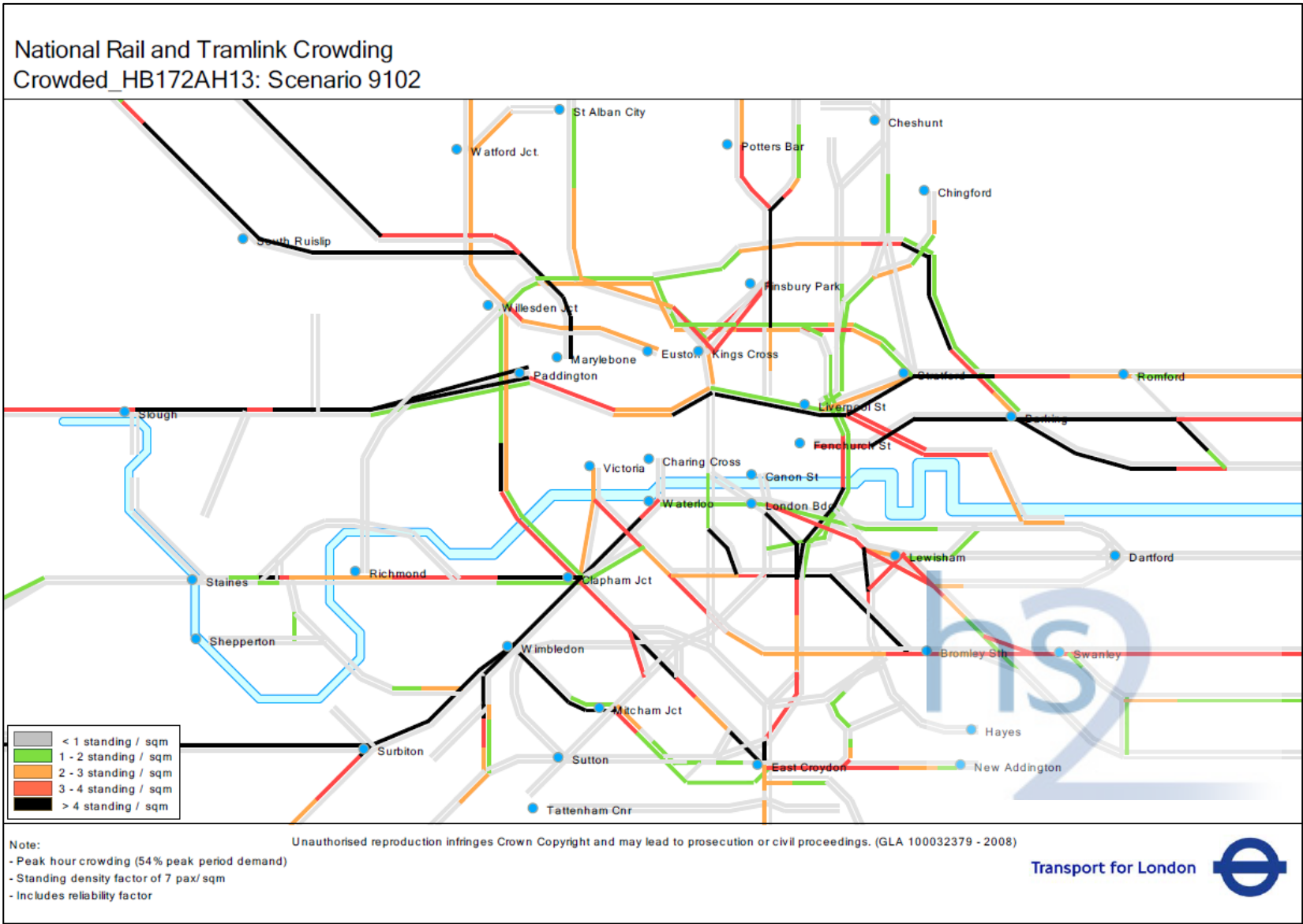
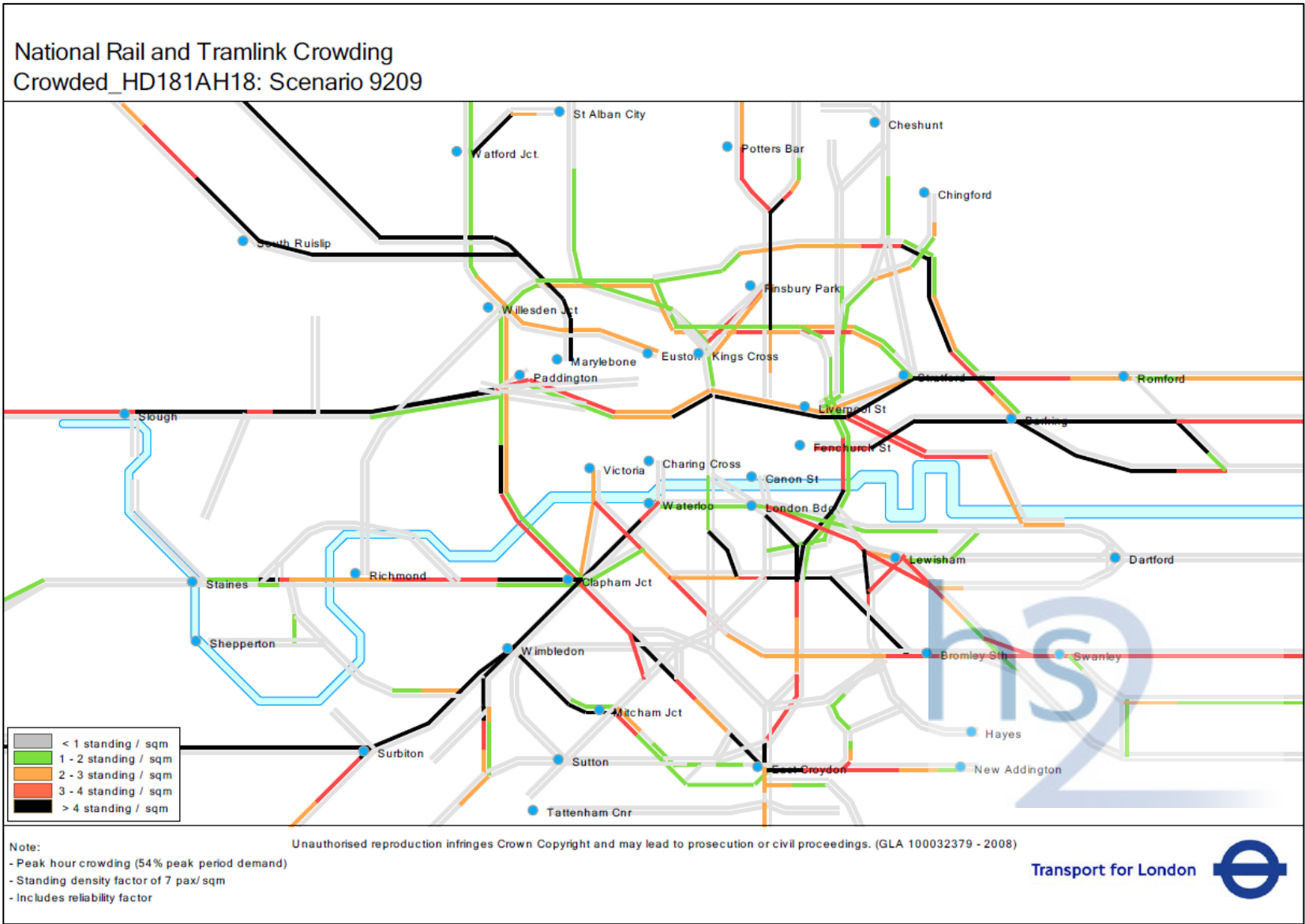


Figure 6-144: NR crowding - 2041 HS2 Phase Two AM peak period (07:00-10:00)



- 6.6.109 Figure 6-145 to Figure 6-148 show PM peak crowding on the NR and LU during the 2026 future baseline and 'with HS2' scenarios.
- 6.6.110 This analysis of the PM peak period indicates that the AM peak patterns on NR services are broadly replicated in the opposite direction. The impacts on LU during the PM peak are limited.

Figure 6-145: London Underground crowding – 2041 future baseline PM peak period (16:00-19:00)

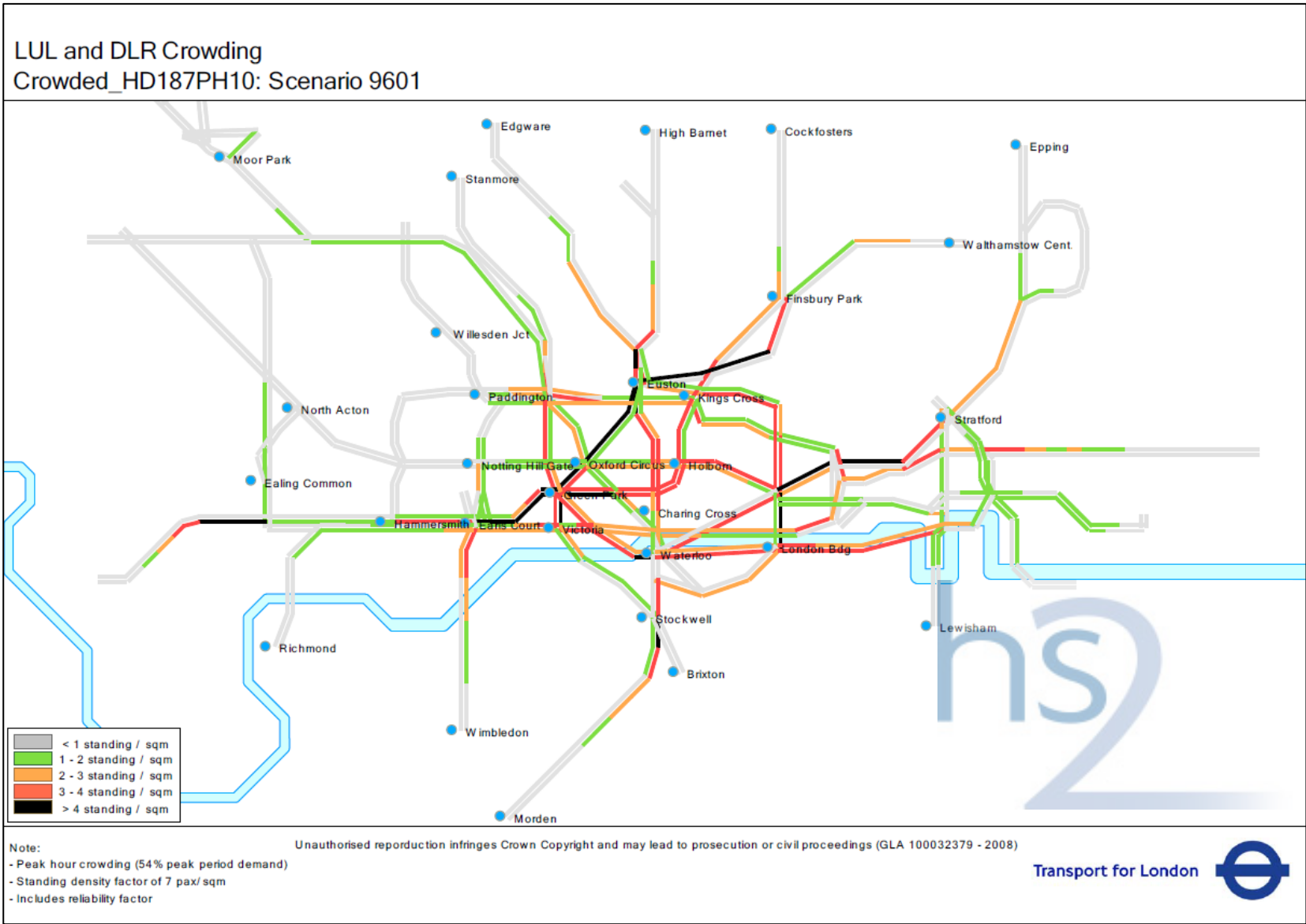


Figure 6-146: London Underground crowding – 2041 HS2 Phase 2 PM peak period (16:00-19:00)

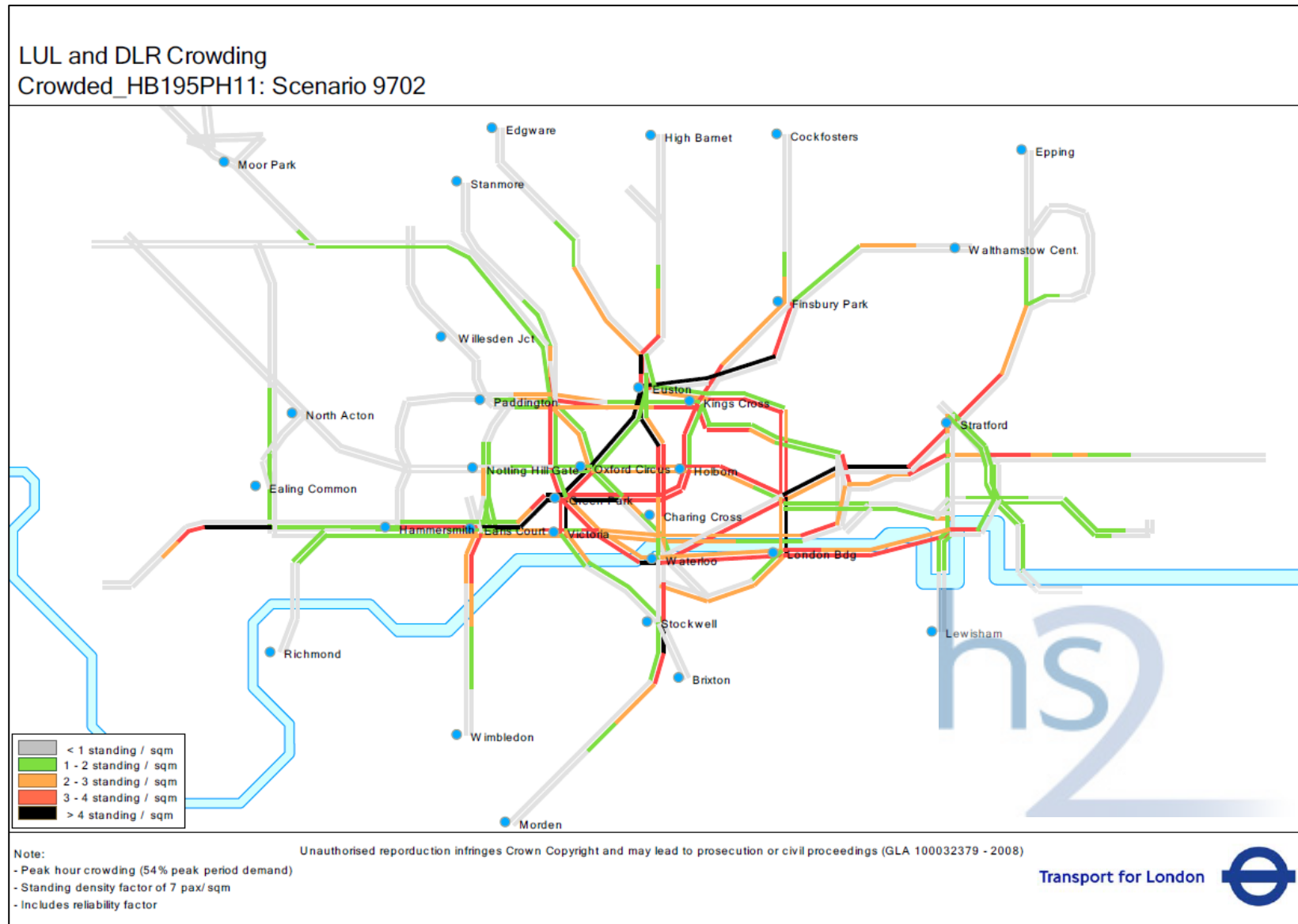


Figure 6-147: NR crowding - 2041 future baseline PM peak period (16:00-19:00)

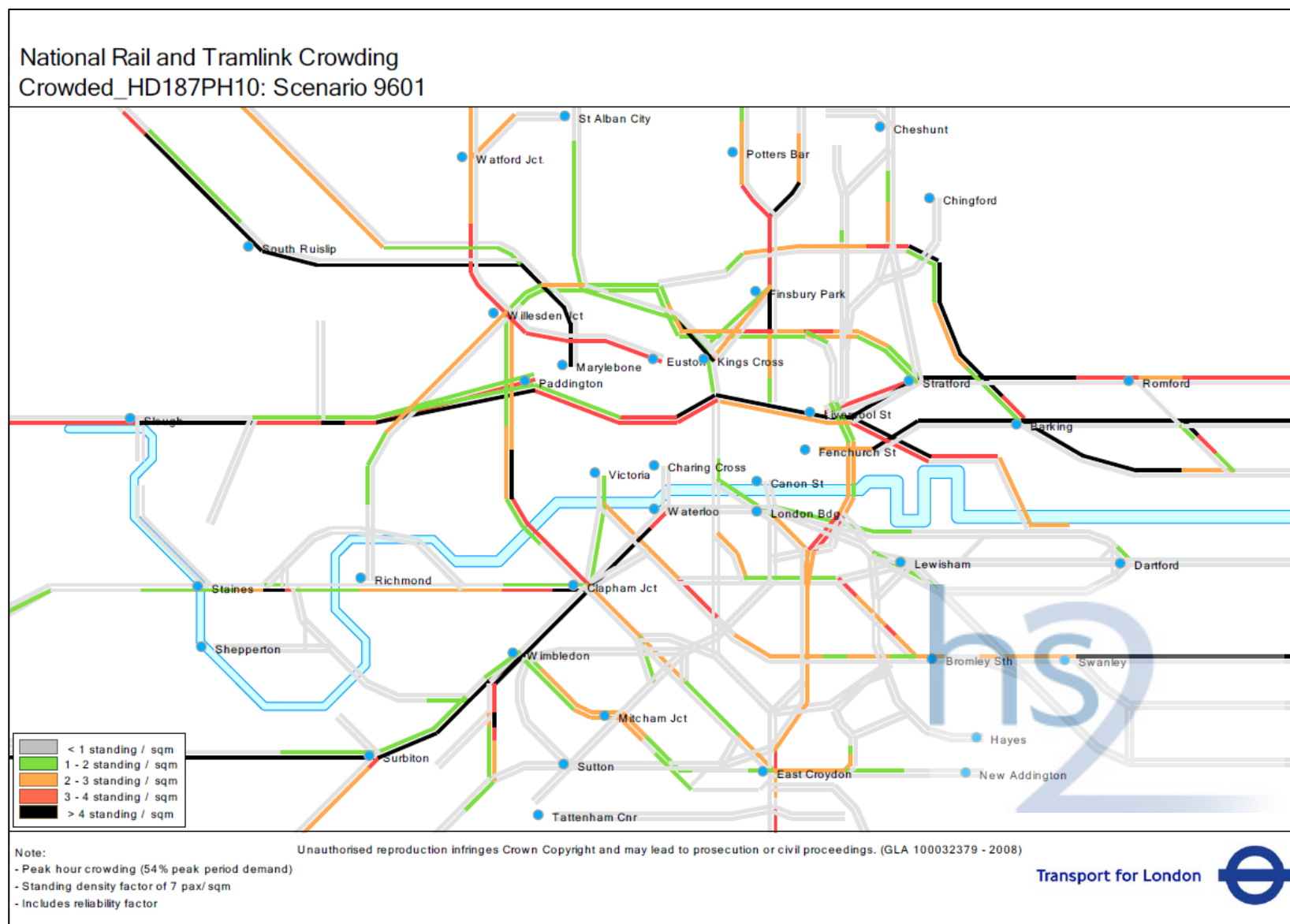
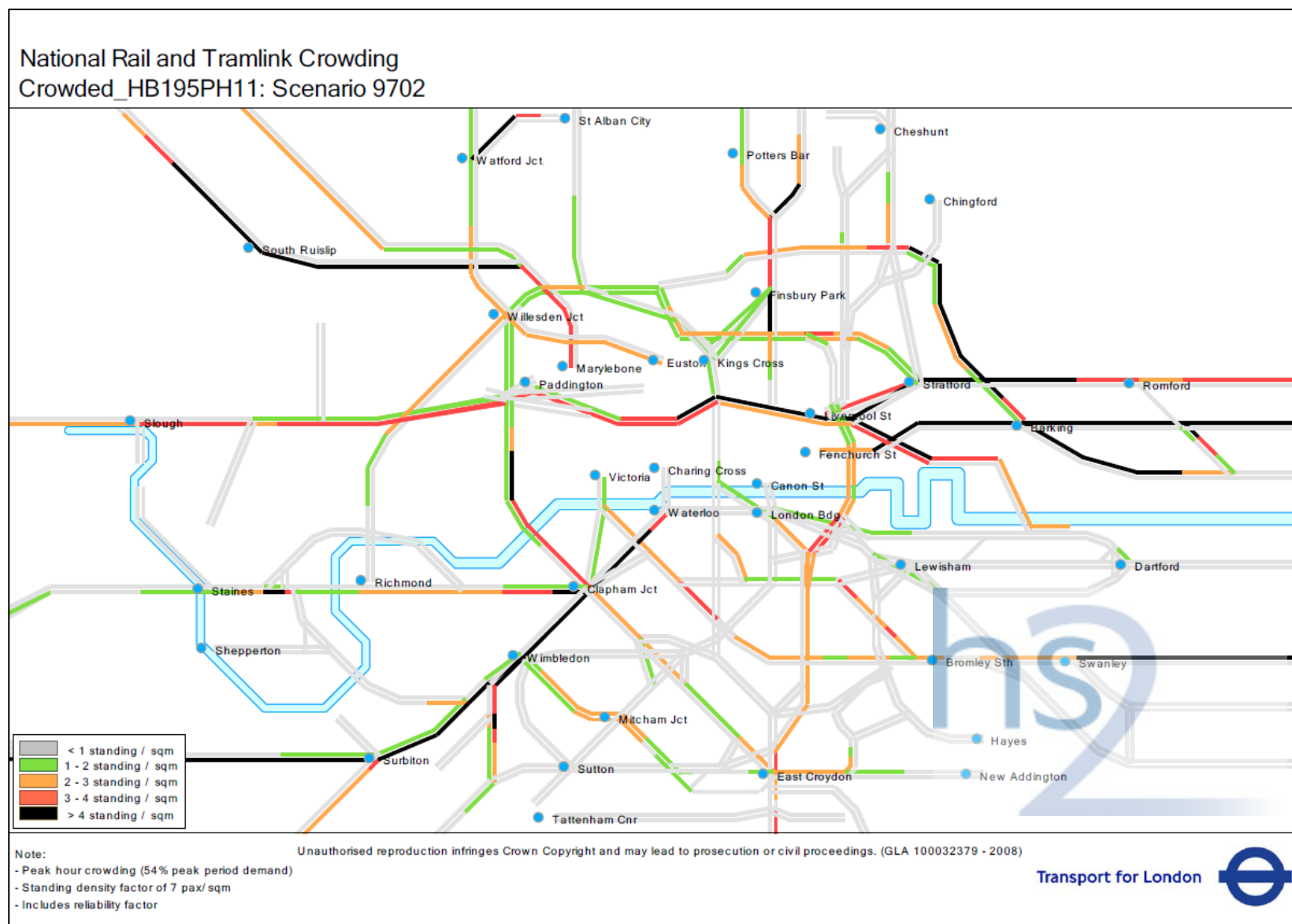
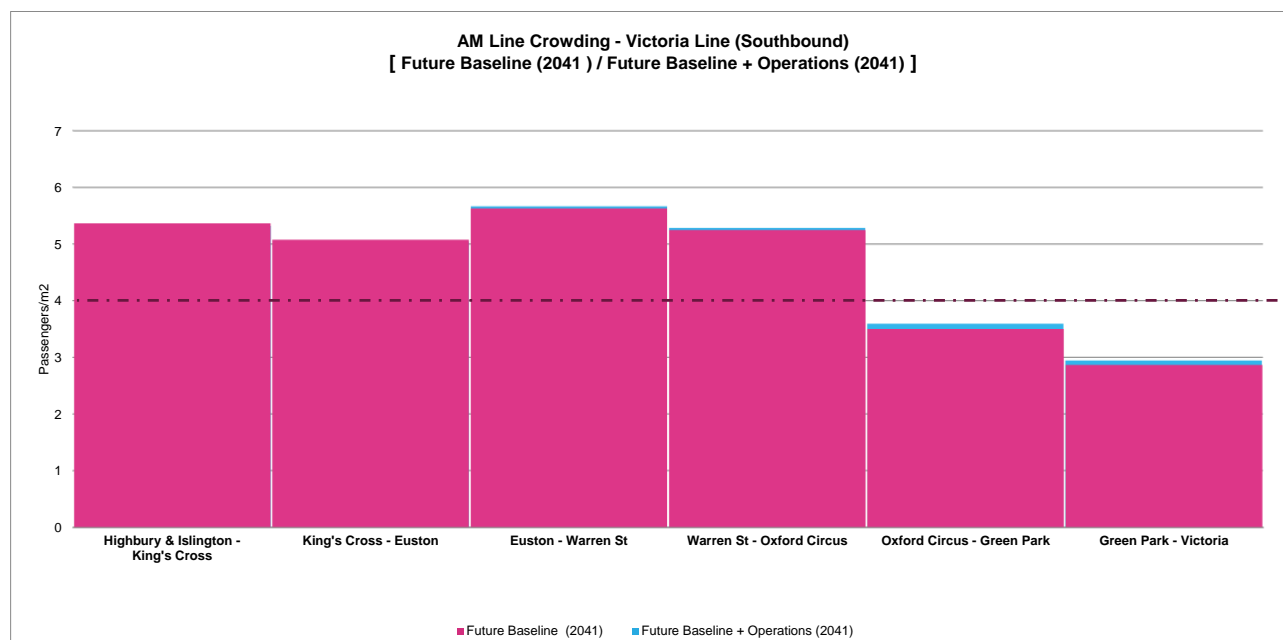


Figure 6-148: NR crowding - 2041 HS2 Phase Two PM peak period (16:00-19:00)



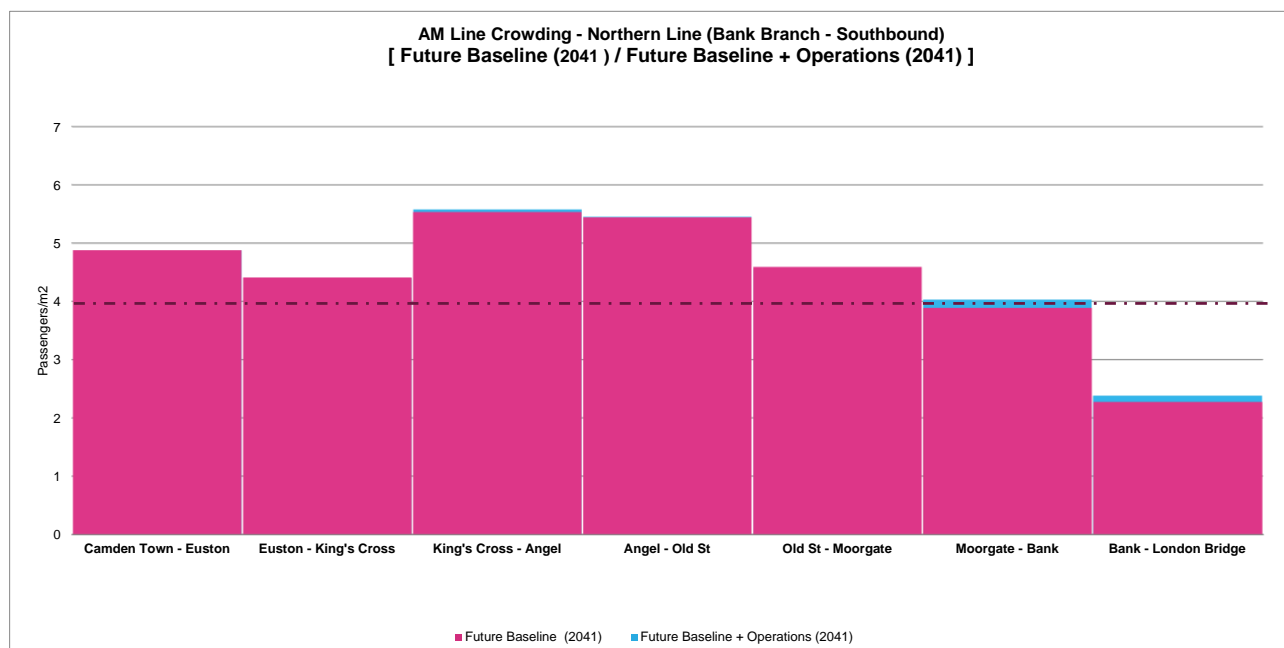
- 6.6.111 In order to assess the changes in crowding in more detail, a station to station analysis has been undertaken comparing crowding for the 2041 future baseline with that of the HS2 Phase Two scenario, relating this to a practical capacity of 4 PPSM.
- 6.6.112 Figure 6-149 shows the station to station analysis on the Victoria Line in the southbound direction during the AM peak period.
- 6.6.113 During the AM peak period, crowding on certain sections of the Victoria Line (between Highbury and Islington to Oxford Circus) are forecast to be around 5.5 PPSM during the 2041 future baseline scenario. The Proposed Scheme does not result in a substantial increase in crowding, given the already high levels of crowding experienced during the future baseline scenario.

Figure 6-149: 2041 Victoria Line southbound crowding per train - AM peak period (07:00-10:00)



- 6.6.114 Figure 6-150 shows the station to station analysis on the Northern Line Bank branch in the southbound direction during the AM peak period. The analysis shows that crowding on the Northern Line Bank branch will be approaching 5 PPSM between Camden Town and Euston and around 5.5 PPSM between King's Cross and Old Street for the 2041 future baseline scenario.

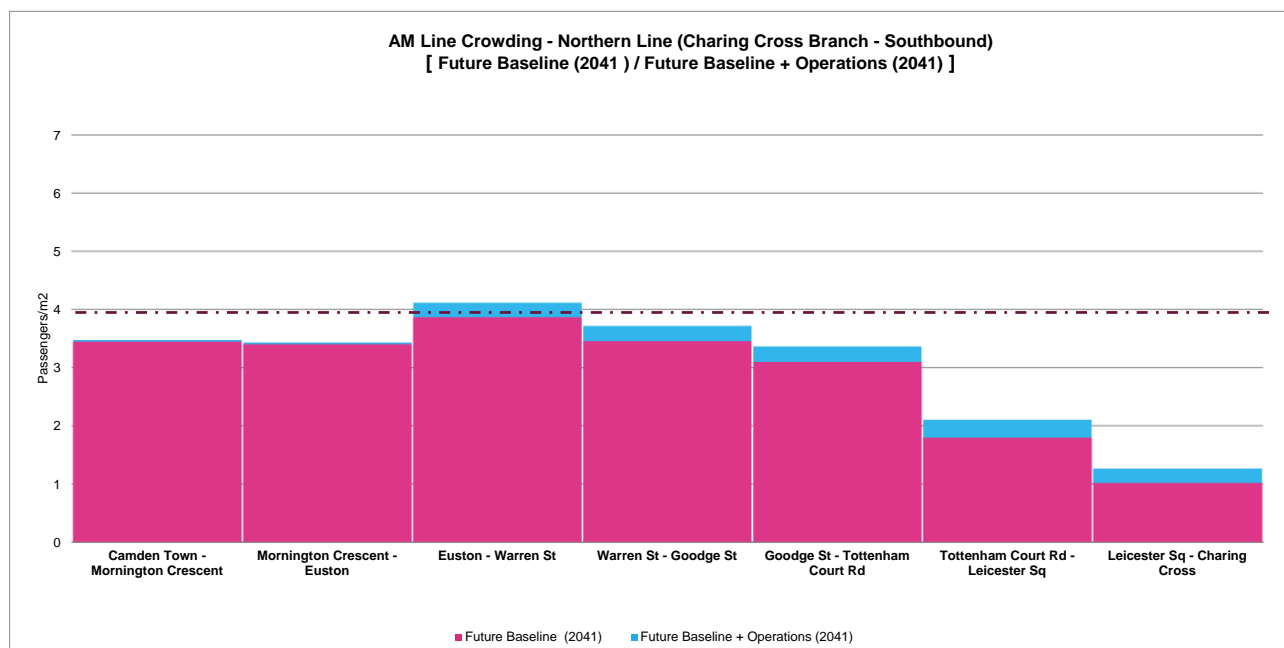
Figure 6-150: 2041 Northern Line Bank Branch southbound crowding per train - AM peak period (07:00-10:00)



6.6.115 The addition of demand from HS2 Phase Two in 2041 will not result in a substantial increase in crowding as, given that trains are already overcrowded in the future baseline scenario, journeys are undertaken on different lines (primarily the sub-surface (Metropolitan, Hammersmith & City and Circle)) lines and the Northern line Charing Cross branch. Crowding does increase between Moorgate and London Bridge by 0.1 PPSM due to additional demand interchanging from the sub-surface lines at Moorgate.

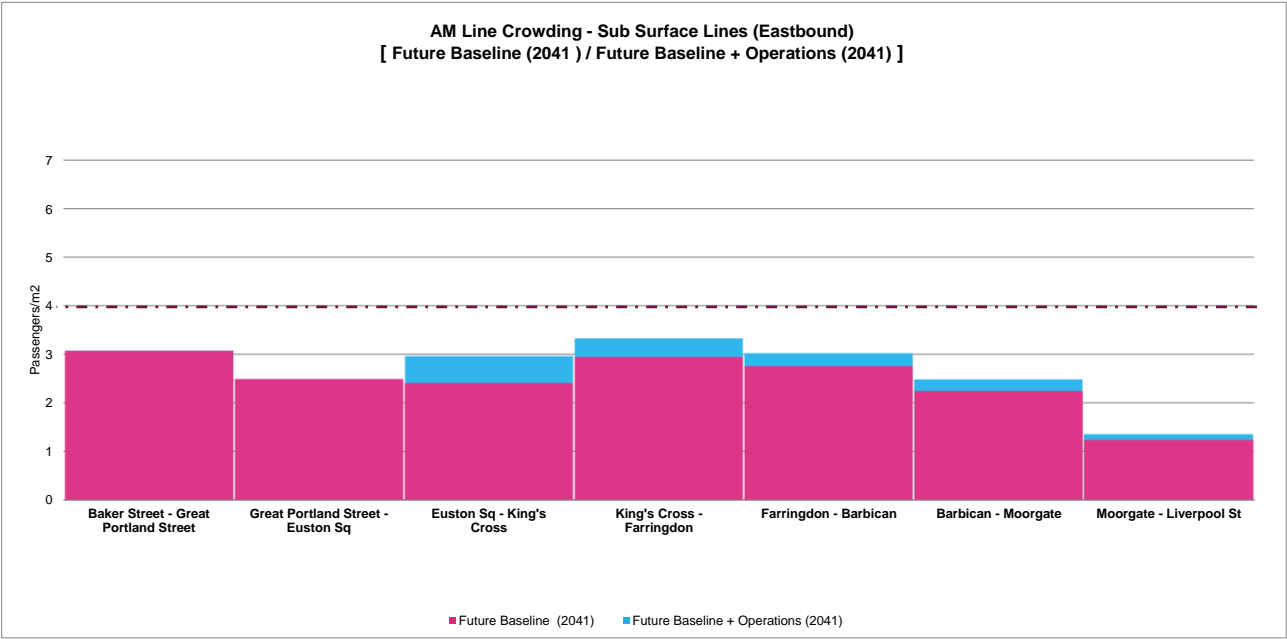
6.6.116 For the Northern Line Charing Cross branch, crowding is approaching 4 PPSM between Euston and Warren Street, as shown on Figure 6-151. As a result of HS2 Phase Two in 2041, this is expected to increase by 0.2 PPSM. This is not expected to have a substantial impact on the line, with crowding only exceeding 4 PPSM on a short section of the line between Euston and Warren Street. Crowding continually decreases from this point southbound.

Figure 6-151: 2041 Northern Line Charing Cross Branch southbound crowding per train - AM peak period (07:00-10:00)



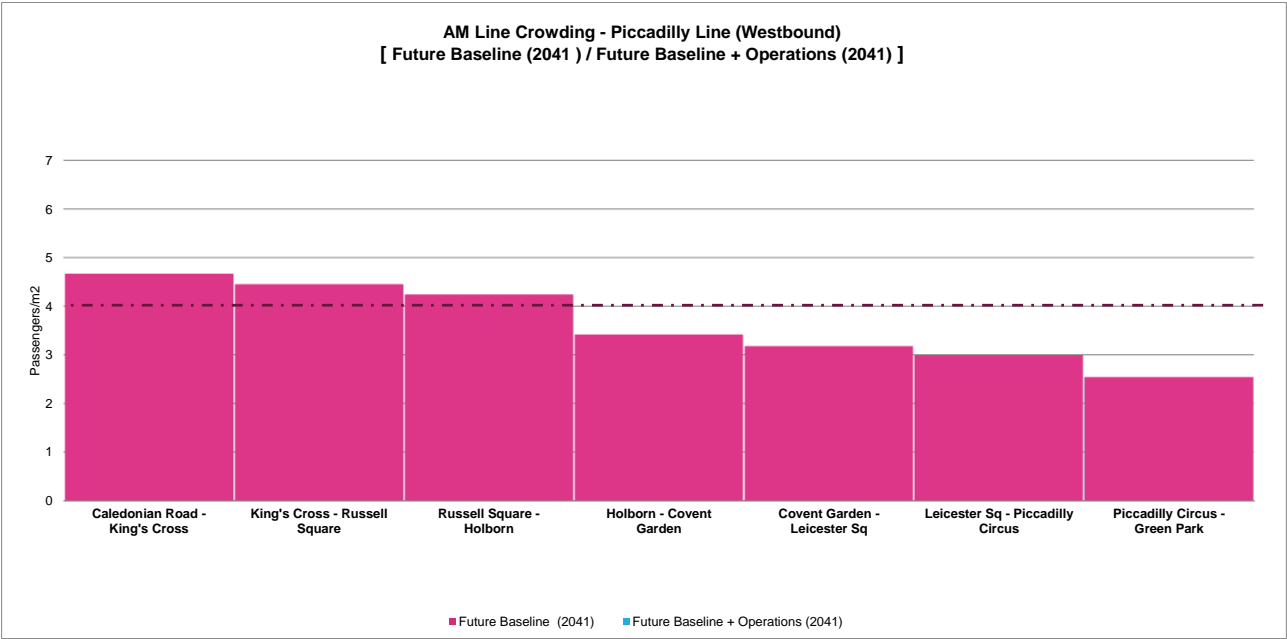
- 6.6.117 On the sub-surface (Metropolitan, Circle and Hammersmith & City) lines, there will be low levels of crowding in the 2041 future baseline scenario, with PPSM values generally around 3 PPSM. This is shown on Figure 6-152.
- 6.6.118 Most additional crowding attributable to HS2 Phase Two in 2041 occurs on the eastbound sub-surface lines between Euston Square and Moorgate, where crowding levels increase by around 0.6 PPSM between Euston Square and King's Cross, reducing to around 0.2 PPSM by Moorgate. This is because these lines experience a lower level of crowding during the future baseline scenario and, therefore, have sufficient available capacity to cater for additional demand.

Figure 6-152: 2041 sub-surface lines eastbound crowding per train - AM peak period (07:00-10:00)



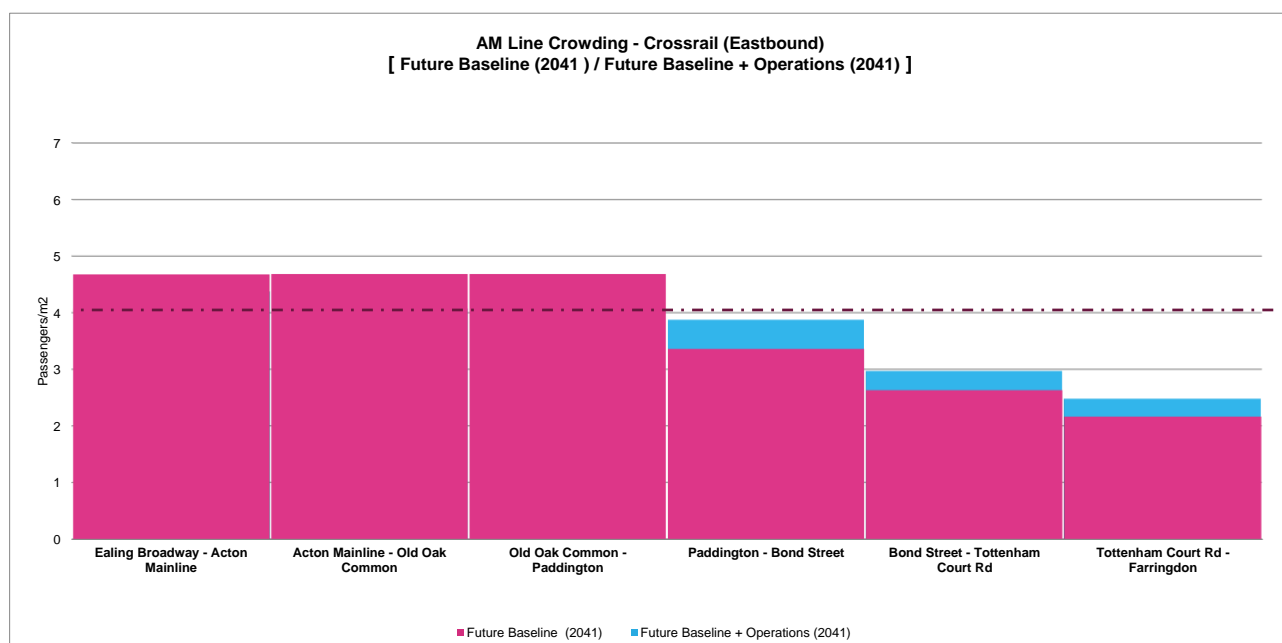
6.6.119 The Piccadilly Line shows crowding of between 4.7 and 4.2 PPSM between Caledonian Road and Holborn with crowding reducing gradually thereafter. This is shown in Figure 6-153. It is not anticipated that there would be any impacts on crowding on the Piccadilly Line as a result of HS2 Phase Two in 2041.

Figure 6-153: 2041 Piccadilly Line westbound crowding per train - AM peak period (07:00-10:00)



- 6.6.120 There is no additional crowding on Crossrail between Ealing Broadway and Paddington. In the future baseline, Crossrail runs directly between Acton Main Line and Paddington but with the Proposed Scheme, Crossrail calls additionally at Old Oak Common. Moreover, the 14 Crossrail services starting at Paddington in the future baseline are extended back to start at Old Oak Common with the Proposed Scheme. This additional capacity from Old Oak Common provided more than sufficient to accommodate the additional passengers boarding Crossrail at Old Oak Common. Because the frequency east of Paddington is the same between the future baseline and Proposed Scheme, crowding on Crossrail increases between Paddington and Bond Street by around 0.5 PPSM as a result of additional passenger demand associated with the Proposed Scheme boarding Crossrail at Old Oak Common. It should be noted that Additional crowding is evident as far as Farringdon but reduces by 0.3 PPSM. However, as shown in Figure 6-154, the additional demand resulting from HS2 Phase Two in 2041 will not result in substantial increases in crowding and will be within acceptable levels.

Figure 6-154: 2041 Crossrail eastbound crowding per train - AM peak period (07:00-10:00)



- 6.6.121 For the PM peak period, crowding was assessed in the opposite direction to the AM peak period, reflecting the peak crowded movements. The pattern is very similar to the AM peak period. Future baseline crowding levels in the PM peak period are generally lower than the AM peak period, with the only section of the network exceeding 5 PPSM being the northbound Victoria Line between Oxford Circus and Euston. Most other sections of line are below 4 PPSM.

- 6.6.122 Despite this, the Proposed Scheme adds most additional crowding on the sub-surface lines between Moorgate and Euston Square, with crowding increasing by around 0.5 PPSM between King's Cross and Euston Square. As with the AM peak, the sub-surface lines are those with the lowest level of future baseline crowding and, therefore, have spare capacity to absorb additional passengers.

Public transport interchanges

- 6.6.123 Assessment of interchange in the Proposed Scheme has focussed on HS2 Phase two in 2041 and a 'maximum growth' scenario. This approach, which will size the station for its full potential usage, has been discussed and agreed with NR and TfL.
- 6.6.124 The Proposed Scheme will make a number of substantial improvements and additions to the functioning of Euston NR and LU stations.
- 6.6.125 High speed rail services will be introduced with 11 new dedicated high speed rail platforms at the west of the station. Conventional rail services will use 13 platforms which will be slightly reconfigured from the existing layout.
- 6.6.126 Both groups of platforms will be served by an integrated and enlarged concourse space. This will be configured to allow passengers to wait in close proximity to all services and connect through to the north-west entrance to the station on A400 Hampstead Road. The design also allows for independent operation of the Conventional, HS2 and LU services if required (e.g. during disruption).
- 6.6.127 Improved access from both HS2 and conventional rail services to Euston Underground station will be provided through two 'Comb' routes, which provide direct links from platform level to the new LU ticket hall, without the need to travel via the station concourse.
- 6.6.128 LU services will continue to operate via the existing platforms and lines. Access and interchange are, however, substantially enhanced, with additional access capacity and step free access being provided to all platforms. A new and substantially enlarged ticket hall will also be provided as part of the scheme. This will be served by a new entrance providing independent access to the LU station. This will be integrated within the rail station façade, allowing for easy interchange between NR and LU modes as well as independent operations in the event of service disruptions.

Capacity assessment

- 6.6.129 The Proposed Scheme has been reviewed extensively using both static and dynamic modelling techniques. This analysis confirms that the design of the Proposed Scheme at Euston complies with the relevant design standards and has sufficient capacity to accommodate both the forecast usage of the station for 2041 and further growth beyond.

- 6.6.130 Review of growth beyond 2041 has been undertaken through a 'maximum growth' sensitivity test which uplifts the 2041 forecasts to align with the estimated maximum achievable loadings by each mode (conventional, HS2 and LU). Overall, this results in a further growth 28% above 2041 forecasts is possible for the AM peak three hours (07:00 to 10:00) and over 30% in the PM peak period (16:00-19:00).

Euston station

- 6.6.131 The design of the proposed Euston station has been developed with reference to the following key documents:
- Network Rail Station Capacity Assessment Guidance; and
 - HS2 Station Sizing Deliverable Approach Statement.
- 6.6.132 The performance requirements set out in these documents have been used in conjunction with the forecast usage for each station element to develop a design which addresses current congestion issues and is able to accommodate forecast growth.
- 6.6.133 The design of the integrated station concourse has been sized, in accordance with NR Station Capacity Assessment Guidance, to provide CIS viewing areas and concourse accumulation zones with a Level of Service B (1.0m² per person) and adequate platform access routes.
- 6.6.134 The proposed design provides a total concourse area of over 15,000 m²; this meets NR guidance in the maximum growth scenario and allows concourse operations at LoS A in the 2041 scenario, when as shown in Table 6-123, PM peak period rail boarding volumes are forecast to be 59,130. This compares with existing baseline PM peak density levels of LoS D.
- 6.6.135 The design of the High Speed platforms has been developed, in accordance with the HS2 Station Sizing Deliverable Approach Statement, to provide a minimum clear width of 3.0m.
- 6.6.136 The design of the access arrangements for the High Speed platforms have been developed to minimise journey times and facilitate onwards interchange to LU services. The new comb route providing access from HS2 services to Euston Underground station and the Euston square link has been sized as a one-way passageway and escalator provision has been developed to meet a recommended 3 minute platform clearance time. Step free access is provided to all HS platforms.

- 6.6.137 The design of the access arrangements for the conventional platforms has been developed to maximise the performance of the existing facilities. The new comb route from the conventional platforms provides additional capacity and improved journey times for passengers interchanging to LU services at Euston Underground station and Euston square. The ramp to platforms 1-3 has been reconfigured to increase the available width and step free access is provided to all conventional platforms.
- 6.6.138 Although the future revenue protection strategy at Euston remains to be confirmed, the current design makes provision for revenue protection using Automatic Ticket Gates throughout Euston station. This is in line with current DfT aspirations.

Euston Underground station and the Euston Square link

- 6.6.139 The design of the proposed Euston Underground station and the Euston Square link has been developed with reference to the LU's Station Planning Standards and Guidance.
- 6.6.140 The performance requirements set out in this documents have been used in conjunction with the forecast usage for each station element to develop a design which integrates well with current facilities, addresses current congestion issues and is able to accommodate forecast growth.
- 6.6.141 The proposed design provides a new expanded LU ticket hall covering over 700m². In accordance with LU's Station Planning Standards and Guidance (SPSG), this provides in excess of 1.0m² per passenger for the peak minute in the maximum growth scenario. This again allows improved performance and increased levels of resilience in the 2041 scenario.
- 6.6.142 The proposed design also substantially expands access and interchange capacity within Euston Underground station. The layout and provision of new escalators has been developed, in accordance with SPSG, to both provide sufficient total access and egress capacity to all platforms in the maximum growth scenario and to support effective station management. The proposed design also introduces a number of additional stairs; the new access route to the Charing Cross platforms brings two pre-existing staircases back into public use, while new stairs are provided in the link to Euston Square station and the interchange level.
- 6.6.143 The design of Euston Underground station entrance has been developed to facilitate interchange between Euston Underground station and Euston station whilst enabling independent operations in the event of service disruptions. Interchange capacity has been sized in accordance with SPSG for the maximum growth scenario.

- 6.6.144 The design of the Euston Square link, including the Gordon Street Entrance and connections to the Eastbound and Westbound platforms has also been developed to facilitate interchange to services from Euston Square and dispersal of passengers south of Euston Road.
- 6.6.145 While the main body of the link has been sized in accordance with SPSSG requirements for the maximum growth scenario, the width restrictions between the existing Metropolitan Line tunnels and the basement of the existing building at 1 - 9 Melton Street and utility constraints mean the target width cannot be provided at this location, and the new platform would operate with a reduced level of service during the AM and PM peak hours.
- 6.6.146 The performance and operation of this area of the design has been explored in further detail using dynamic modelling techniques in collaboration with LU and is considered to remain a major beneficial element of the proposed design despite this longer term congestion issue.

Summary

- 6.6.147 Overall the impacts of the scheme on public transport interchange are strongly positive. It provides substantial additional capacity within the NR and LU stations and allowing for projected growth to 2041 and for further growth (over 28% in the AM peak and over 30% in the PM) beyond this level.
- 6.6.148 Interchange between rail and underground services is also improved with both the new connection from Euston station to Euston Square station facilitating interchange to the sub-surface lines and the introduction the two new 'Comb' routes, giving direct access routes from both conventional and High Speed platforms to Euston Underground station and the Euston Square link.
- 6.6.149 Step free access is provided throughout Euston station, Euston Underground station and Euston Square station. Revenue protection is also introduced for all platforms at Euston station.

Onward mode share

- 6.6.150 As shown in Table 6-130, onward mode share analysis has been undertaken to support assessment of the forecast demand on the transport network. This builds on three key inputs, analysis of the current (2012 baseline) situation, Railplan projections for 2026 and 2041 and stakeholder consultation.

Table 6-130: Sources for forecast onward mode share of rail and LU passengers at Euston

Mode	Analysis	Source		
		Railplan	Survey analysis	Mode share consultation
Walking	Footway and crossing impacts outside of the station	Yes	Yes	Yes
Taxi and car	Highway Network impacts	Yes	Yes	Yes
	Taxi and pick-up/set-down facility provision and design	Yes	Yes	Yes
Bus and coach	Public transport network impacts	Yes		
	Bus facility provision and design	Yes	Yes	
Cycling	Highway network impacts	Yes	Yes	Yes
	Cycle facility provision and design	Yes	Yes	Yes

- 6.6.151 The mode share for cycling and walking has been informed by analysis of current mode share trends and adjusted in consultation with TfL to reflect future policy.
- 6.6.152 The mode share for taxi has been derived from analysis of the current (2012 baseline) situation and reflects the higher taxi mode share associated with longer distance rail services. The mode share for private vehicle movements reflects the removal of the basement car parking facility at Euston station.
- 6.6.153 For assessment of pedestrian footways and crossings, the underlying survey analysis has been used in conjunction with the Railplan outputs to determine the future footway flows.
- 6.6.154 The station access and station egress mode share values for taxi, car-parking, car pick-up and set-down and cycling are shown in Table 6-131 and Table 6-132 and, as reflected in the following analysis, remain consistent across the 2026 and 2041 scenarios. While in total, this implies a cumulative mode share of greater than 100%, this range of approaches has been adopted to ensure that each mode is assessed with a robust mode share estimate. Where necessary, additional mode-specific sensitivity tests have also been undertaken. These are reported on in the relevant sections.

Table 6-131: Future mode share (from station) selected modes

Period	Mode	LU	Commuter rail	Long distance high speed (conventional and HS2)
AM peak period (07:00-10:00)	Taxi	0.4%	2%	6%
	Car parked	NA - disabled parking only		
	Car pick-up	0.1%	0%	0%
	Cycle		7%	7%

Period	Mode	LU	Commuter rail	Long distance high speed (conventional and HS2)
PM peak period (16:00-19:00)	Walk	24%	24%	16%
	Taxi	0.6%	3%	6%
	Car parked	NA - disabled parking only		
	Car pick-up	0.1%	0%	0%
	Cycle		7%	7%
	Walk	24%	24%	16%

Table 6-132: Future mode share (to station) selected modes

Period	Mode	London Underground	Commuter rail	Long distance high speed (conventional and HS2)
AM peak period (07:00-10:00)	Taxi	0.4%	2%	6%
	Car parked	NA - disabled parking only		
	Car pick-up	0.1%	0%	0%
	Cycle		7%	7%
	Walk	24%	24%	16%
PM peak period (16:00-19:00)	Taxi	0.6%	3%	6%
	Car parked	NA - disabled parking only		
	Car pick-up	0.1%	0%	0%
	Cycle		7%	7%
	Walk	24%	24%	16%

6.6.155 The onward mode shares by bus and LU have been derived directly using outputs from the Railplan modelling.

Bus 2026

Bus provision

6.6.156 The Proposed Scheme will provide a new linear bus station to the south of the Euston station. In addition, a new bus standing area will be provided at the northeast side of the station off A4200 Eversholt Street.

- 6.6.157 Together, the new bus station and northern bus standing area increase capacity for through and terminating bus routes, in order to meet the additional demand generated by the Proposed Scheme. The northern bus standing area provides eight additional bus stands which could accommodate up to approximately four new terminating bus routes. The linear bus station can also accommodate an increased frequency of through bus routes, while the relocation of some bus standing to the northern bus standing area will improve the operation of the bus station.
- 6.6.158 The design of the new bus station and northern bus standing area provide flexibility in bus routing while reducing bus mileage. The proposals provide a new right turn lane for buses from A501 Euston Road into the new bus station.
- 6.6.159 Detailed plans for the future bus network in 2026 and 2041 are not known at this stage. It is expected that the existing bus network and the proposed bus routes will continually evolve.
- 6.6.160 The Proposed Scheme includes the following changes to bus facilities around Euston station:
- on A501 Euston Road, 'Euston Station' eastbound bus stop H is proposed to be relocated to the east by approximately 90m and a short section of eastbound bus lane is proposed to be removed. A new right lane for buses from A501 Euston Road into the new bus station will be provided;
 - on A4200 Eversholt Street, 'Aldenharn Street' southbound bus stop S is proposed to be relocated to the south by approximately 70m, so it can be served by bus routes which start from the new northern bus standing area;
 - on A4200 Upper Woburn Place, 'Upper Woburn Place' southbound bus stop M will be relocated to the south by approximately 70m to reduce the risk of traffic queues from the bus stop affecting A501 Euston Road;
 - on A400 Hampstead Road, 'Silverdale' northbound bus stop B will be relocated to the south by 90m and southbound bus stop W will be relocated to the north by 90m, placing them at the end rather than at the centre of the new A400 Hampstead Road overbridge; and
 - on A400 Hampstead Road, 'Robert Street' southbound bus stop will be relocated to the south by approximately 90m to avoid the new junction of A400 Hampstead Road with Robert Street and Cobourg Street.

Bus service changes

- 6.6.161 The 'south to east' bus route 91 currently bypasses the existing bus station when travelling from east to south. The Proposed Scheme will enable the 91 bus to stop at the bus station in both directions.
- 6.6.162 Both bus routes 59 and 91 will turn right from A501 Euston Road into the bus station when travelling from south to east. Bus route 253 will also be diverted to leave the bus station via A501 Euston Road, Churchway and Grafton Place.

- 6.6.163 In addition to the new bus station and new northern bus standing area, TfL has requested that the existing bus routes be supplemented by two proposed bus routes which would require standing space for four buses. These proposed routes are:
- A terminating route which travels eastwards from Euston, with similarities to existing terminating bus route 476 or to the eastern half of through route 205. It has been assumed that this route would operate at a frequency of 10 buses per hour; and
 - A terminating bus route which travels southward from Euston, with similarities to the existing terminating bus route 68. It has been assumed that this route would operate at a frequency of 10 buses per hour.

Bus journey times

- 6.6.164 Table 6-133 shows the impact on bus journey times of the bus route changes and diversions, as well as some additional bus delay on the route as a whole. The journey time changes also account for the impact of additional and diverted traffic on the local highway network.

Table 6-133: HS2 Phase One in 2026 changes in bus journey times relative to future baseline

Bus route	From/to	Direction	AM peak hour (08:00–09:00)				PM peak hour (17:00–18:00)			
			2026 baseline	2026 with 'with HS2'	Actual change	% change	2026 baseline	2026 with 'with HS2'	Actual change	% change
10	King's Cross to Hammersmith	Eastbound and westbound	91.8	93.10	1.30	1.4%	134.2	136.20	2.00	1.5%
30	Hackney Wick to Oxford Street	Eastbound	49	49.10	0.10	0.2%	62.9	64.60	1.70	2.7%
		Westbound	52.3	53.00	0.70	1.3%	49.9	49.80	-0.10	-0.2%
73	Victoria to Stoke Newington	Eastbound	41.2	41.50	0.30	0.7%	58.1	60.20	2.10	3.6%
		Westbound	41.9	43.80	1.90	4.5%	71.6	72.40	0.80	1.1%
205	Paddington to Bow	Eastbound	52.4	52.10	-0.30	-0.6%	68.3	69.90	1.60	2.3%
		Westbound	54.7	55.60	0.90	1.6%	55.7	55.40	-0.30	-0.5%
390	Archway to Notting Hill Gate	Eastbound and westbound	82.6	84.00	1.40	1.7%	119.5	121.20	1.70	1.4%
59	Streatham Hill to King's Cross	Eastbound	35.2	37.50	2.30	6.5%	41.4	44.60	3.20	7.7%
		Southbound	34.4	36.30	1.90	5.5%	39.7	41.00	1.30	3.3%
91	Trafalgar Square to Hornsey	Eastbound	35.8	38.20	2.40	6.7%	43.2	46.50	3.30	7.6%
		Southbound	36	41.30	5.30	14.7%	32.6	38.60	6.00	18.4%
18	Euston to Sudbury	Eastbound	43.5	45.40	1.90	4.4%	36.7	38.80	2.10	5.7%
		Westbound	37.8	37.40	-0.40	-1.1%	33.2	32.90	-0.30	-0.9%
476	Euston to Northumberland Park	Eastbound and westbound	72.7	75.70	3.00	4.1%	79.1	82.40	3.30	4.2%
68	Euston to West Norwood	Northbound and southbound	83.3	59.20	-24.10	3.2%	89.1	44.20	-44.90	3.2%
253	Euston to Hackney	Northbound and southbound	66.7	70.10	3.40	5.1%	65.2	67.30	2.10	3.1%
168	Hampstead Heath to Old Kent Road	Northbound and southbound	84.3	98.80	14.50	-1.8%	78.7	80.70	2.00	2.5%
24	Hampstead Heath to Grosvenor	Northbound	39.6	40.50	0.90	2.3%	42.9	44.60	1.70	4.0%

Bus route	From/to	Direction	AM peak hour (08:00–09:00)				PM peak hour (17:00–18:00)			
			2026 baseline	2026 with 'with HS2'	Actual change	% change	2026 baseline	2026 with 'with HS2'	Actual change	% change
	Road	Southbound	40.9	42.50	1.60	3.0%	68.7	69.40	0.70	1.0%
27	Chalk Farm to Chiswick	Northbound and southbound	108.7	110.90	2.20	1.7%	120.2	121.90	1.70	1.4%
29	Trafalgar Square to Wood Green	Northbound and southbound	77.5	80.10	2.60	2.6%	108.5	110.90	2.40	2.2%
88	Camden Town to Clapham Common	Northbound	46.3	45.40	-0.90	2.9%	51.5	53.40	1.90	3.7%
		Southbound	43.3	45.10	1.80	3.1%	47.4	48.20	0.80	1.7%
134	North Finchley to Tottenham Court Road	Northbound	28.6	29.40	0.80	2.8%	35.6	37.20	1.60	4.5%
		Southbound	34.9	36.60	1.70	3.8%	60.2	60.80	0.60	1.0%

- 6.6.165 Table 6-133 shows that three bus routes are predicted to have an increase of over 5% in end-to-end journey time. These are:
- Bus route 59: eastbound in the AM and PM peak hours and southbound in the AM peak hour;
 - Bus route 91: eastbound in the AM and PM peak hours and southbound in the AM and PM peak hours; and
 - Bus route 253: in the AM peak hour. This route is a terminating route and the delay incurred accounts for the northbound and southbound directions.
- 6.6.166 For routes 59, 91 and 253, these changes can be part attributed to a combination of increased journey time through the new bus station and increased journey time on other sections of the routes. It should be noted that the new bus station, at 200m long, is approximately twice the length of the existing bus station.
- 6.6.167 For all other bus routes, the impact on the end-to-end bus journey times is generally less than 5%. Some minor decreases in end-to-end journey times have also been recorded.

Bus passenger demand

- 6.6.168 Table 6-134 shows the estimated change in bus boarding and alighting demand at Euston station. This includes Euston bus station, together with bus stops on A501 Euston Road and A4200 Eversholt Street that could be used to access the station. The estimated change in boarding and alighting demand on bus routes using A400 Eversholt Street is also outlined in Table 6-134.
- 6.6.169 The increase bus passenger demand has been derived by calculating the proportional increase between the future baseline and HS2 Phase One scenarios, in Railplan, and applying this to the 2012 baseline demand. Whilst the Railplan bus boarding and alighting validation is good at an aggregate sub-regional level, it should be noted that it underestimates the 2012 baseline level of bus travel. The assessment of the 2026 bus boarding and alighting demand, which is based on the Railplan model, focusses on the relative difference between the 2026 future baseline Railplan model and the 2026 HS2 Phase One Railplan model, rather than the absolute values. The change in flows between tests will be a better representation of change than the absolute change in values. However, the results should be treated as approximate.
- 6.6.170 All bus routes which serve Euston station use double deck buses, for which TfL Buses specify a capacity of 87 passengers. This has been used to convert the change in passengers into a change in buses per hour.

Table 6-134: 2026 Bus boarding and alighting demand

Location	Scenario	AM peak period (07:00-10:00)			PM peak period (16:00-19:00)		
		Boarders	Alighters	Total	Boarders	Alighters	Total
Euston station	2026 baseline	4,062	2,271	6,333	1,847	3,019	4,866
	2026 'with HS2'	3,815	2,312	6,127	1,722	2,972	4,694
	Change (in passengers)	-247	41	-206	-125	-47	-172
	Change (in approximate buses per hour)	-2.8	0.5	-	-1.4	-0.5	-
A400 Hampstead Road	2026 baseline	325	242	567	324	423	747
	2026 'with HS2'	480	432	912	457	594	1,051
	Change (in passengers)	155	190	345	133	171	304
	Change (in approximate buses per hour)	1.8	2.2	-	1.5	2.0	-

- 6.6.171 A change in bus boarding and alighting demand, equating to approximately -2.8 to +0.5 buses per hour, has been estimated at the bus stops in the vicinity of Euston station. This is negligible compared with the 206 buses per hour that serve Euston station from A501 Euston Road, A4200 Eversholt Street and Euston bus station. The reduction in bus passenger demand can be part attributed to the fact that the station will be accessible from A400 Hampstead Road, resulting in a shift in passengers to routes along A400 Hampstead Road.
- 6.6.172 A change in bus boarding and alighting demand, equating to approximately 1.5 to 2.2 buses per hour, has been estimated at the bus stop servicing Euston station on A400 Hampstead Road. This is negligible compared with the 100 buses per hour that currently serve the A400 Hampstead Road. The increase can be part attributed to the fact that Euston station will be accessible from A400 Hampstead Road.
- 6.6.173 Figure 6-155 and Figure 6-156 show the absolute difference in 2026 bus passenger flows between the future baseline and HS2 Phase One scenarios in the AM and PM peak periods respectively, as obtained from Railplan.

Figure 6-155: 2026 AM peak period (07:00-10:00) bus difference plot (future baseline vs HS2 Phase One)

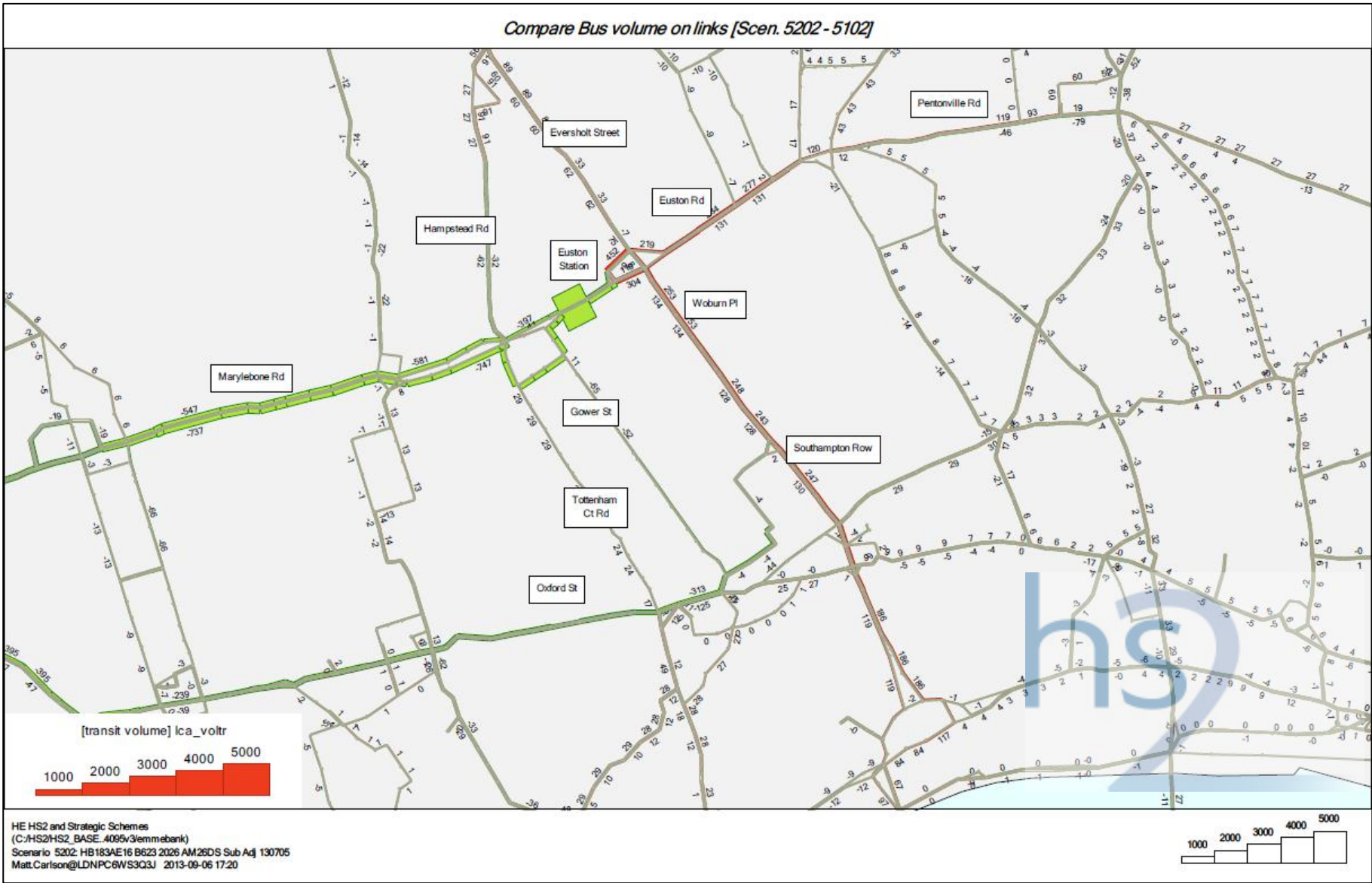
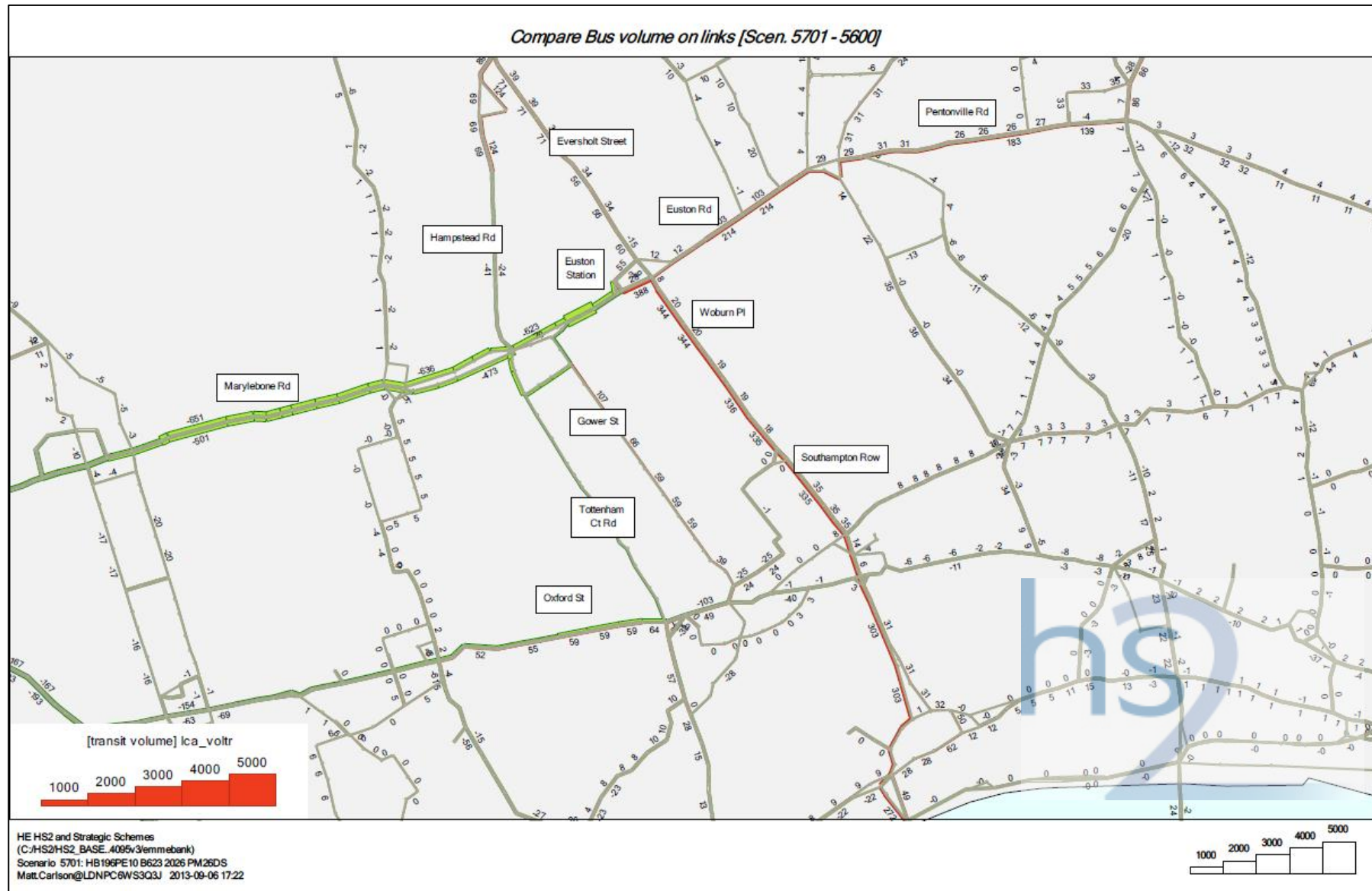


Figure 6-156: 2026 PM peak period (16:00-19:00) bus difference plot (future baseline vs HS2 Phase One)



- 6.6.174 Figure 6-155 and Figure 6-156 indicate an increase in flows along A4200 Upper Woburn Place during the AM peak period of around 250 passengers in the southbound direction and 130 passengers in the northbound direction. There are also a small number of negligible flow changes on other north to south corridors.
- 6.6.175 On A501 Euston Road west of Euston station, the reduction in bus passenger flows can be part attributed to a shift from bus to Crossrail services, resulting in a reduction in bus flows along this bus corridor.
- 6.6.176 The bus passenger flow difference plots provide a geographical illustration of how the scheme changes demand on the bus corridors serving Euston station. The impacts are summarised in Table 6-135.

Table 6-135: 2026 bus passenger flow differences - future baseline vs HS2 Phase One

Link	Change	AM peak period (07:00-10:00)		PM peak period (16:00-17:00)	
		Towards Euston	Away from Euston	Towards Euston	Away from Euston
A501 Marylebone Road	Change (in passengers)	-547	-737	-651	-501
	Change (in approximate buses per hour)	-2.1	-2.8	-2.5	-1.9
A501 Pentonville Road	Change (in passengers)	-46	119	183	26
	Change (in approximate buses per hour)	-0.2	0.5	0.7	0.1
A4200 Eversholt Street	Change (in passengers)	33	62	34	56
	Change (in approximate buses per hour)	0.1	0.2	0.1	0.2
A4200 Southampton Row	Change (in passengers)	130	247	335	35
	Change (in approximate buses per hour)	0.5	0.9	1.3	0.1
A400 Tottenham Court Road/Gower Street	Change (in passengers)	29	-65	0	107
	Change (in approximate buses per hour)	0.1	-0.2	0.0	0.4
A400 Hampstead Road (north of station entrance)	Change (in passengers)	91	27	124	69
	Change (in approximate buses per hour)	0.3	0.1	0.5	0.3

- 6.6.177 A summary of the differences provided in Table 6-135 are as follows:
- on the A501 Marylebone Road corridor, a change in bus passenger flows equating to approximately -2.8 to -1.9 buses per hour has been estimated;
 - on the A501 Pentonville Road corridor, a change in bus passenger flows equating to approximately -0.2 to 0.7 buses per hour has been estimated, which is negligible compared with the 41 buses per hour in each direction on this corridor that serve Euston station;

- on the A4200 Eversholt Street corridor, a change in bus passenger flows equating to approximately 0.1 to 0.2 buses per hour has been estimated, which is negligible compared with the 21 buses per hour in each direction on this corridor that serve Euston Station;
- on the A4200 Upper Woburn Place corridor, a change in bus passenger flows equating to approximately 0.1 to 1.3 buses per hour has been estimated, which is negligible compared with the 36 buses per hour in each direction on this corridor that serve Euston station;
- on the A400 Tottenham Court Road/A400 Gower Street corridor a change in bus passenger flows equating to approximately -0.2 to 0.4 buses per hour has been estimated, which is negligible compared with the 50 buses per hour in each direction on this corridor that serve Euston station; and
- On the A400 Hampstead Road corridor a change in bus passenger flows equating to approximately 0.1 to 0.5 buses per hour has been estimated, which is negligible compared with the 50 buses per hour in each direction on this corridor that serve Euston Station.

6.6.178 The analysis shows that some additional bus services may be required to accommodate the additional bus demand generated by HS2. However, when compared against the existing bus provision on each route, the number of additional buses required would be negligible.

Bus 2041

Bus provision

6.6.179 For the purposes of this assessment, the provision of bus routes and bus facilities is assumed to be the same as that of the 2026 'with HS2' scenario.

Bus journey times

6.6.180 The impact of the bus route changes (in minutes) as well as some additional bus delay on the route as a whole, are shown in Table 6-136. The journey time changes also account for the impact of additional and diverted traffic on the location highway network.

Table 6-136: 2041 HS2 Phase Two changes in bus journey times relative to future baseline

Bus route	From/to	Direction	AM peak hour (08:00–09:00)				PM peak hour (17:00–18:00)			
			2041 baseline	2041 with 'with HS2'	Actual change	% change	2041 baseline	2041 with 'with HS2'	Actual change	% change
10	King's Cross to Hammersmith	Eastbound and westbound	94	95.30	1.30	1.4%	137.9	142.60	4.70	3.4%
30	Hackney Wick to Oxford Street	Eastbound	50	50.40	0.40	0.8%	66.7	69.30	2.60	3.9%
		Westbound	55.1	56.20	1.10	2.0%	52.4	52.20	-0.20	-0.4%
73	Victoria to Stoke Newington	Eastbound	42	42.60	0.60	1.4%	61.4	65.60	4.20	6.8%
		Westbound	44.6	46.30	1.70	3.8%	72.9	74.10	1.20	1.6%
205	Paddington to Bow	Eastbound	53.4	53.70	0.30	0.6%	71.1	73.20	2.10	3.0%
		Westbound	58	58.90	0.90	1.6%	58.3	57.60	-0.70	-1.2%
390	Archway to Notting Hill Gate	Eastbound and westbound	85.1	86.60	1.50	1.8%	122.6	127.20	4.60	3.8%
59	Streatham Hill to King's Cross	Eastbound	35.6	38.60	3.00	8.4%	42.8	47.40	4.60	10.7%
		Southbound	35.1	37.60	2.50	7.1%	41.1	45.50	4.40	10.7%
91	Trafalgar Square to Hornsey	Eastbound	35.9	39.10	3.20	8.9%	44.7	49.70	5.00	11.2%
		Southbound	37.6	43.40	5.80	15.4%	33.3	42.60	9.30	27.9%
18	Euston to Sudbury	Eastbound	44.5	46.20	1.70	3.8%	37.3	39.60	2.30	6.2%
		Westbound	38.7	38.10	-0.60	-1.6%	34.6	33.70	-0.90	-2.6%
476	Euston to Northumberland Park	Eastbound and westbound	75.1	78.80	3.70	4.9%	82.8	86.90	4.10	5.0%
68	Euston to West Norwood	Northbound and southbound	85.4	60.00	-25.40	-29.7%	92	45.90	-46.10	-50.1%
253	Euston to Hackney	Northbound and southbound	69.4	78.70	9.30	13.4%	68.8	71.00	2.20	3.2%
168	Hampstead Heath to Old Kent Road	Northbound and southbound	86.5	106.80	20.30	23.5%	81.3	86.90	5.60	6.9%

Bus route	From/to	Direction	AM peak hour (08:00–09:00)				PM peak hour (17:00–18:00)			
			2041 baseline	2041 with 'with HS2'	Actual change	% change	2041 baseline	2041 with 'with HS2'	Actual change	% change
24	Hampstead Heath to Grosvenor Road	Northbound	39.8	41.00	1.20	3.0%	43.8	46.80	3.00	6.8%
		Southbound	42.2	49.40	7.20	17.1%	69	70.60	1.60	2.3%
27	Chalk Farm to Chiswick	Northbound and southbound	109.5	118.30	8.80	8.0%	123.4	125.50	2.10	1.7%
29	Trafalgar Square to Wood Green	Northbound and southbound	80	88.40	8.40	10.5%	111.1	115.80	4.70	4.2%
88	Camden Town to Clapham Common	Northbound	46.5	45.50	-1.00	-2.2%	53.1	55.80	2.70	5.1%
		Southbound	44.6	52.10	7.50	16.8%	49.9	51.50	1.60	3.2%
134	North Finchley to Tottenham Court Road	Northbound	29	30.10	1.10	3.8%	37.1	39.70	2.60	7.0%
		Southbound	36.8	43.80	7.00	19.0%	60.6	62.00	1.40	2.3%

- 6.6.181 Table 6-136 shows that 12 bus routes are predicted to have an increase of over 5% in end-to-end journey time. These are:
- Bus route 59 eastbound and southbound during the AM and PM peak hours;
 - Bus route 91 eastbound and southbound during the AM and PM peak hours;
 - Bus route 253 in the AM peak hour. This route is a terminating route and the delay incurred accounts for the northbound and southbound directions;
 - Bus route 24 northbound during the PM peak hour;
 - Bus route 29 northbound and southbound during the PM peak hour;
 - Bus route 88 northbound during the AM and PM peak hours and southbound during the AM peak hour;
 - Bus route 134 northbound during the PM peak hour;
 - Bus route 18 eastbound during the PM peak hour;
 - Bus route 68 northbound and southbound during the PM peak hour;
 - Bus route 73 eastbound during the PM peak hour; and
 - Bus route 168 northbound during the AM and PM peak hour.
- 6.6.182 The journey time increases on bus routes 91 and 59 can be attributed to a combination of increased journey time through the new bus station and increased journey time on other sections of the routes.
- 6.6.183 Where the end-to-end journey times have increased by more than 5% on other routes, the increases can be attributed primarily to delays incurred due to increases in background traffic on the highway network but also to traffic diverted due to the closures of Gordon Street, Melton Street and Cardington Street, increased taxi volumes associated with the Proposed Scheme and the diversion of taxi along A400 Hampstead Road.
- 6.6.184 For the remaining six routes, the impacts on the end-to-end bus journey times is minimal with journey times increasing by less than 5%.

Bus passenger demand

- 6.6.185 Table 6-137 shows the estimated change in bus boarding and alighting demand in the Euston station cordon and the A400 Hampstead Road cordon during the weekday AM peak period and weekday PM peak period.
- 6.6.186 As previously noted, all bus routes which serve Euston Station use double deck buses, for which TfL Buses specify a capacity of 87 passengers. This has been used to convert the change in passengers into a change in buses per hour.

Table 6-137: 2041 bus boarding and alighting demand

Location	Scenario	AM peak period (07:00-10:00)			PM peak period (16:00-17:00)		
		Boarders	Alighters	Total	Boarders	Alighters	Total
Euston station	2041 baseline	5,349	2,670	8,019	2,458	4,273	6,731
	2041 'with HS2'	6,479	3,257	9,736	2,548	4,940	7,488
	Change (in passengers)	1,130	587	1,717	90	667	757
	Change (in approximate Buses per hour)	13.0	6.7	-	1.0	7.7	-
A400 Hampstead Road	2041 baseline	385	279	664	382	483	865
	2041 'with HS2'	771	653	1,424	660	834	1,494
	Change (in passengers)	386	374	760	278	351	629
	Change (in approximate Buses per hour)	4.4	4.3	-	3.2	4.0	-

- 6.6.188 A change in bus boarding and alighting demand equating to approximately 1 to 13 buses per hour has been estimated at the bus stops in the vicinity of Euston station of A501 Euston Road, A4200 Eversholt Street and Euston bus station.
- 6.6.189 A change in bus boarding and alighting demand equating to approximately 3.2 to 4.4 buses per hour has been estimated at the bus stops servicing Euston station on A400 Hampstead Road.
- 6.6.190 Figure 6-157 and Figure 6-158 show the absolute difference in 2041 bus passenger flows between the future baseline and HS2 Phase Two scenarios in the AM and PM peak periods respectively, as obtained from Railplan. In the Figures the red bars represent an increase in demand while the green bars represent a decrease in demand.

Figure 6-157: 2041 AM peak period (07:00-10:00) bus difference plot (future baseline vs HS2 Phase Two)

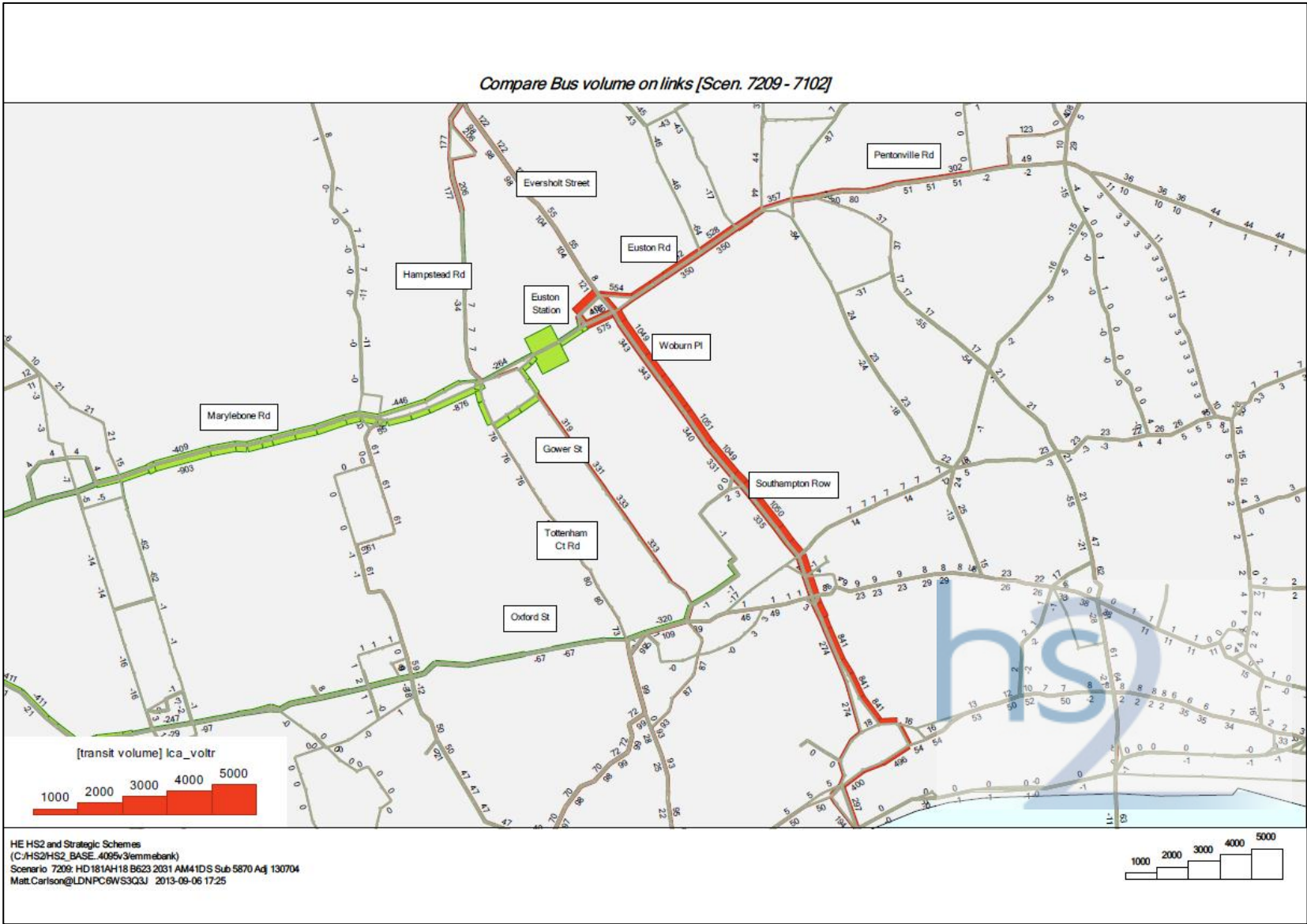
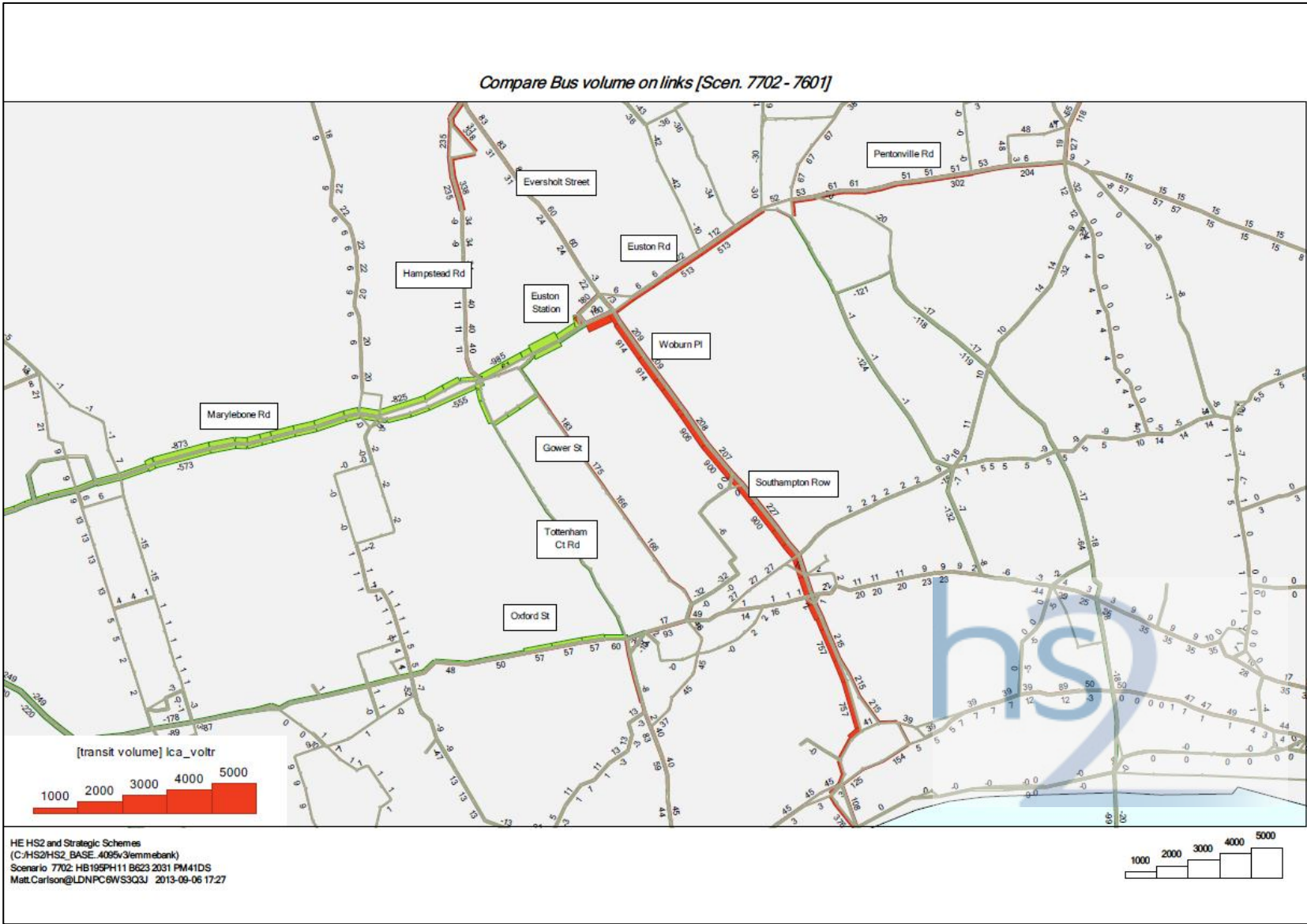


Figure 6-158: 2041 PM peak period (16:00-19:00) bus difference plot (future baseline vs HS2 Phase Two)



- 6.6.191 Figure 6-157 and Figure 6-158 indicate an increase in flows along A4200 Upper Woburn Place during the AM peak period of around 1,050 passengers in the southbound direction and 350 passengers in the northbound direction. There are also a small number of negligible flow changes on other north to south corridors. A further increase of approximately 330 bus passengers in the southbound direction on A400 Gower Street has been estimated.
- 6.6.192 A reduction of approximately 300 bus passengers in the eastbound directions along both A40 Oxford Street and A501 Euston Road is forecast. On A40 Oxford Street, this is likely due to the corresponding increases in passenger demand on Crossrail services from Old Oak Common. On A501 Euston Road, this can be part attributed to a shift from GWML services to HS2 at Old Oak Common, resulting in a reduction in bus flows along this bus corridor.
- 6.6.193 East of Euston station, bus demand on routes along A501 Euston Road increase by 530 passengers in the westbound direction and 350 passengers in the eastbound direction.
- 6.6.194 The bus passenger flow difference plots provide a geographical illustration of how the scheme changes demand on the bus corridors serving Euston station. The impacts are summarised in Table 6-138.

Table 6-138: 2041 bus passenger flow differences - future baseline vs HS2 Phase Two

Link	Change	AM peak period (07:00-10:00)		PM peak period (16:00-17:00)	
		Towards Euston	Away from Euston	Towards Euston	Away from Euston
A501 Marylebone Road	Change (in passengers)	-409	-903	-873	-573
	Change (in approximate buses per hour)	-1.6	-3.5	-3.3	-2.2
A501 Pentonville Road	Change (in passengers)	51	302	302	51
	Change (in approximate buses per hour)	0.2	1.2	1.2	0.2
A4200 Eversholt Street	Change (in passengers)	55	104	60	24
	Change (in approximate buses per hour)	0.2	0.4	0.2	0.1
A4200 Southampton Row	Change (in passengers)	335	1,050	900	227
	Change (in approximate buses per hour)	1.3	4.0	3.4	0.9
A400 Tottenham Court Road/Gower Street	Change (in passengers)	76	319	0	183
	Change (in approximate buses per hour)	0.3	1.2	0.0	0.7
A400 Hampstead Road (north of station entrance)	Change (in passengers)	206	177	338	235
	Change (in approximate buses per hour)	0.8	0.7	1.3	0.9

- 6.6.195 A summary of the differences provided in Table 6-138 is as follows:

- on the A501 Marylebone Road corridor, a change in bus passenger flows equating to approximately -3.5 to -1.6 buses per hour has been estimated;
- on the A501 Pentonville Road corridor, a change in bus passenger flows equating to approximately 0.2 to 1.2 buses per hour has been estimated, which is negligible compared with the 41 buses per hour in each direction on this corridor that serve Euston station;
- on the A4200 Eversholt Street corridor a change in bus passenger flows equating to approximately 0.1 to 0.4 buses per hour has been estimated, which is negligible compared with the 21 buses per hour in each direction on this corridor that serve Euston station;
- on the A4200 Southampton Row corridor a change in bus passenger flows equating to approximately 0.9 to 4.0 buses per hour has been estimated, which suggests there should be a minor increase from the 36 buses per hour in each direction on this corridor that serve Euston station, such as terminating route 68;
- on the A400 Tottenham Court Road/Gower Street corridor a change in bus passenger flows equating to approximately 0.0 to 1.2 buses per hour has been estimated, which is negligible compared with the 50 buses per hour in each direction on this corridor that serve Euston station; and
- on the A400 Hampstead Road corridor a change in bus passenger flows equating to approximately 0.7 to 1.3 buses per hour has been estimated, which is negligible compared with the 50 buses per hour in each direction on this corridor that serve Euston station.

Coach

- 6.6.196 Coaches will be able to set down and pick up passengers at Euston station's set down facilities at the northwest entrance and on the west side of A4200 Eversholt Street. Staff assistance will be available from both entrances for mobility impaired persons. If coaches wish to park at Euston station between set down and pick up, they will be able to park in a new coach parking bay on the east side of A4200 Eversholt Street, in the position previously occupied by 'Aldenham Street' southbound bus stop S.
- 6.6.197 Rail replacement coaches will be accommodated at Euston Station's set down facilities at the northwest entrance and on the west side of A4200 Eversholt Street.

Pedestrians

- 6.6.198 The Proposed Scheme includes substantial improvements for pedestrians, including:
- expanded public space at Euston station's south entrances;
 - provision of a new subsurface link to Euston Square station which will abstract

the pedestrian interchange traffic to and from Euston Square station and Euston station and Euston underground station as well as taking approximately 50% of pedestrian flow to and from locations south of A501 Euston Road along Gordon Street;

- provision of new subway beneath A501 Euston Road linking Euston station to Gordon Street, which will reduce demand on busy crossings and will include lifts that will provide step free access;
- the north end of Gordon Street will be closed to motor vehicles, to create a shared pedestrian/cycle traffic free route;
- the closure of Melton Street to general traffic and a reconfiguration of the external concourse and bus station, eliminating the need for pedestrians travelling to (during the AM peak period) and from (during the PM peak period) the west along A501 Euston Road to cross at a signalised crossing;
- a new signalised pedestrian crossing on A501 Euston Road to the west of Gordon Street/new bus station access;
- a new station entrance on A4200 Eversholt Street to improve station accessibility;
- the provision of a new East West overbridge connecting the north-west corner of the station to A4200 Eversholt Street at Barnby Street, which will contribute to a substantial improvement to the east to west permeability in the Euston station area and across Camden;
- the provision of direct routes through Euston Square Gardens to assist with the dispersal of pedestrians during the AM peak period. In particular, the route on the east side of the Euston Square Gardens, from the corner of A501 Euston Road and A4200 Eversholt Street, will provide a much more direct route into the station for pedestrians travelling to and from the east;
- a northern station entrance that will improve walking accessibility from the north and connections with Hampstead Road bus services; and
- improved pedestrian and cycle crossings on A400 Hampstead Road.

6.6.199 Euston station will also benefit from a new area of public realm in the station forecourt area. Euston Square Gardens will no longer be bisected by the vehicular route to the bus station, which will be relocated to the west. Pedestrian routes through the gardens will be provided and it will be more permeable for pedestrians accessing the station from A501 Euston Road. This increased permeability will continue through the bus station with pedestrian crossing points provided at regular intervals (three in total).

Pedestrians 2026

Pedestrian demand

- 6.6.200 The pedestrian demand in 2026 has been derived by taking surveyed peak hour flows on footways and crossings and uplifting these to 2026, based on the difference between Railplan demand and observed flows. This approach incorporates TfL land use assumptions and includes the forecast increase in demand associated with likely new development in the Euston area. In addition, background, non-rail-related growth on the street network of 0.5% per year has been assumed. This is based on LU's Station Demand Modelling guideline document (2005). The AM and PM peak hour pedestrian demand at Euston station can be seen in Figure 6-159 and Figure 6-160.
- 6.6.201 For the future year with-HS2 scenarios, pedestrian flows have been adjusted to reflect the abstraction due to the availability of the Euston Square link.

Figure 6-159: 2026 AM peak hour (08:00-10:00) pedestrian demand

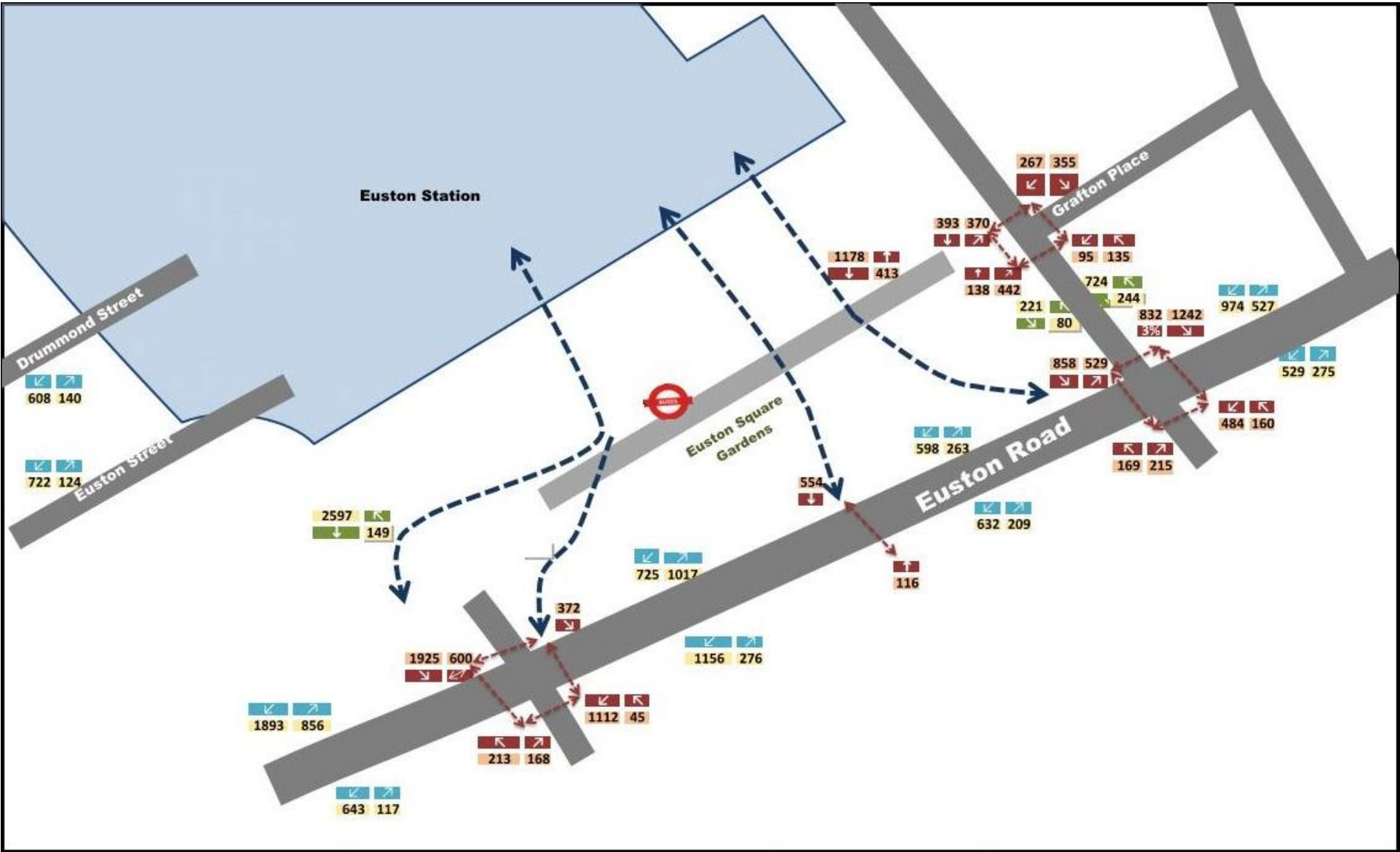
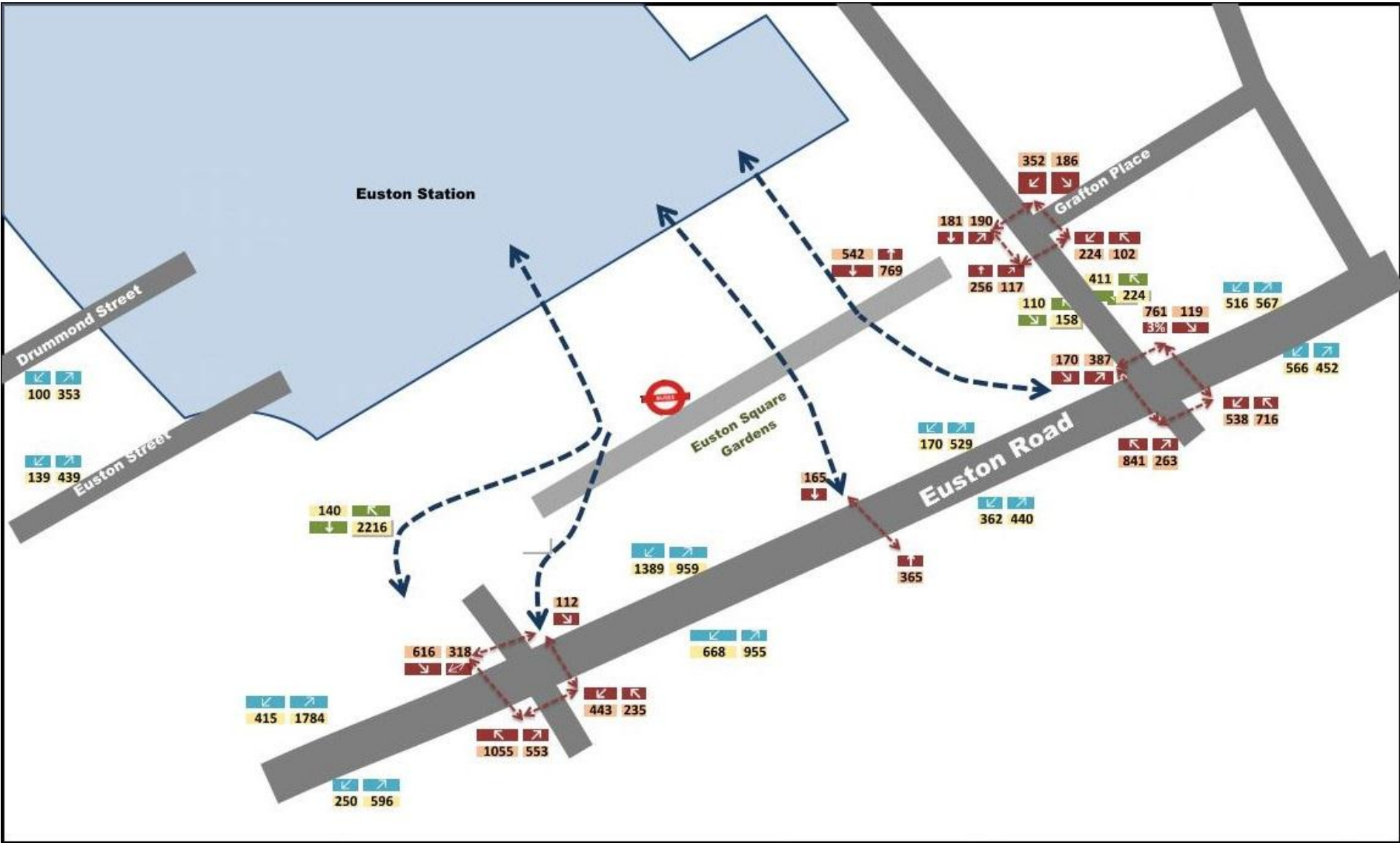


Figure 6-16o: 2026 PM peak hour (17:00-18:00) pedestrian demand



Pedestrian crossing assessment summary

- 6.6.202 This section provides results of the 2026 pedestrian comfort level (PCL) assessment at pedestrian crossings with the Proposed Scheme in operation at Euston station. The PCL classifies the comfort based on the level of crowding a pedestrian experiences on-street. For pedestrian crossings, a PCL A describes the most comfortable conditions, while a PCL E describes the least comfortable conditions.
- 6.6.203 For HS2 Phase One in 2026, the Railplan model results show an increase in overall rail passenger demand¹ at Euston station of 23% for arrivals and 11% for departures, in the AM peak period, and 18% for arrivals and 25% for departures during the PM peak period. As such, there is an increase in demand to all locations on the pedestrian network. However, the new subsurface link beneath A501 Euston Road will reduce the impact of this increase for pedestrian flows along A501 Euston Road towards Euston Square station.
- In general, the new pedestrian layout serves to reduce congestion to the west and south-west of Euston station. However, the additional pedestrian demand to the east of Euston station results in a reduction in pedestrian comfort at pedestrian crossings.
- 6.6.204 Table 6-139 outlines the PCL of each pedestrian crossing in the vicinity of Euston station. This shows the PCL in the 2026 future baseline and 2026 with HS2 scenarios. The timings are based on the results of the optimised TRANSYT model runs. The locations of each of the crossings can be seen in Figure 6-161.

¹ Includes HS2 passengers together with conventional rail long distance and suburban passengers

Figure 6-161: Pedestrian crossing locations

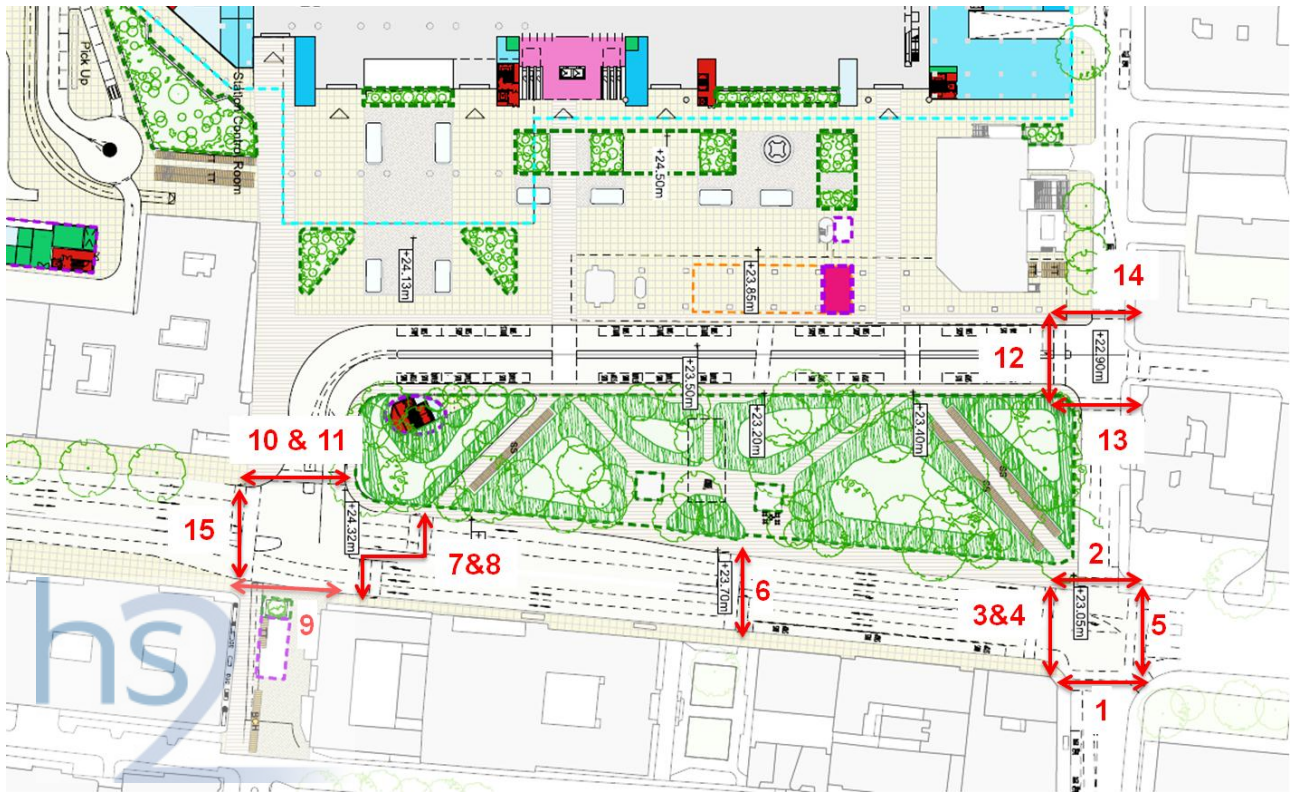


Table 6-139: 2026 PCL for pedestrian crossings - AM peak hour (08:00-09:00)

No.	Location	Actual width (m)	2026 baseline	2026 'with HS2'	PCL change
1	A4200 Upper Woburn Place at A501 Euston Road	3	B	B	No change
2	Euston Square at A501 Euston Road	3	B	B	No change
3	A501 Euston Road (west) at A4200 Upper Woburn Place	4	C+	C+	Decrease
4	A501 Euston Road (west) at Euston Square	4	C+	C+	Decrease
5	A501 Euston Road (east) at A4200 Upper Woburn Place	3	E	E	No change
6	A501 Euston Road	3.3	B-	B-	No change
7	A501 Euston Road (east) at Gordon Street	3	E	B	Increase
8	A501 Euston Road (east) at Gordon Street	3	E	B+	Increase
9	Gordon Street at A501 Euston Road	3	B+	-	-
10	Bus station access at A501 Euston Road	3	E	E	No change
11	Bus station access at A501 Euston Road	3	D	A-	Increase
12	Bus station access at A4200 Eversholt Street	3	E	B-	Increase
13	Euston Square at Grafton Way	2.5	C	C	No change
14	A4200 Eversholt Street at Grafton Way	2.5	B-	C+	Decrease

No.	Location	Actual width (m)	2026 baseline	2026 'with HS2'	PCL change
15	A501 Euston Road at Gordon Street (new crossing)	10	-	B	-

(p/m/m is pedestrians per metre per minute)

6.6.205 The results of the PM peak hour assessment shows that similar PCL will be experienced at the pedestrian crossings, although the direction of peak flow will be reversed. The PM peak hour PCL for pedestrian crossings can be seen in Table 6-140.

Table 6-140: 2026 PCL for pedestrian crossings - PM peak hour (17:00-18:00)

No.	Location	Actual width (m)	2026 baseline	2026 'with HS2'	PCL change
1	A4200 Upper Woburn Place at A501 Euston Road	3	B-	B	Increase
2	Euston Square at A501 Euston Road	3	B+	B+	No change
3	A501 Euston Road (west) at A4200 Upper Woburn Place	4	C	C-	Decrease
4	A501 Euston Road (west) at Euston Square	4	C	C-	Decrease
5	A501 Euston Road (east) at A4200 Upper Woburn Place	3	C+	C	Decrease
6	A501 Euston Road	3.3	B	B	No change
7	A501 Euston Road (east) at Gordon Street	3	E	B	Increase
8	A501 Euston Road (east) at Gordon Street	3	B+	A-	Increase
9	Gordon Street at A501 Euston Road	3	B+	-	-
10	Bus station access at A501 Euston Road	3	E	E	No change
11	Bus station access at A501 Euston Road	3	D	B	Increase
12	Bus station access at A4200 Eversholt Street	3	E	B	Increase
13	Euston Square at Grafton Way	2.5	B-	C+	Decrease
14	A4200 Eversholt Street at Grafton Way	2.5	B+	B	Increase
15	A501 Euston Road at Gordon Street (new crossing)	10	-	B+	-

(p/m/m is pedestrians per metre per minute)

6.6.206 A summary of the results of the pedestrian crossing assessment are:

- an improvement for north to south flows across A501 Euston Road at Gordon Street on the east side. This improvement is a result of the provision of subsurface link beneath A501 Euston Road and a pedestrian crossing on A501 Euston Road to the west of Gordon Street;
- an improvement on the pedestrian crossing at the new bus station entrance. This improvement is generated by reconfiguration of the external concourse to

facilitate flows to the west along A501 Euston Road as well as the subsurface link beneath A501 Euston Road;

- a reduction in congestion at the pedestrian crossing on the west side of the junction of A4200 Eversholt Street with Grafton Place, due to the new pedestrian link through Euston Square Gardens and the pedestrian crossings through the new Euston bus station; and
- PCL B+ on the new pedestrian crossing on A501 Euston Road to the west of Gordon Street.

6.6.207 Sensitivity testing shows that widening crossings enables more acceptable PCL values. Crossing widening needs to be considered in line with traffic conditions and local area restrictions (e.g. access to and from the Euston Road fire station).

Pedestrian footway assessment summary

6.6.208 This section provides results for the 2026 pedestrian comfort level (PCL) assessment on footways with the Proposed Scheme in operation at Euston station. For footways, a PCL A describes the most comfortable conditions, while a PCL F describes the least comfortable conditions.

6.6.209 A number of footways within the vicinity of Euston station have been assessed to understand the PCL when the Proposed Scheme is in operation in 2026.

6.6.210 The assessment shows that the majority of streets in the vicinity of Euston station have footway widths that are comfortable for users in the 2026 future baseline scenario and HS2 Phase One scenario.

6.6.211 There are however a small number of existing issues, where inadequate widths have been identified.

6.6.212 This firstly relates the A501 Euston Road where the presence of bus stops reduces the clear width available below the minimum required. Secondly, multiple locations on Euston Street and Drummond Street are identified where inadequate clear width is provided due to the narrow footway widths on Euston Street and Drummond Street (all PCL F). In various locations the footway width is further reduced by the presence of street furniture.

6.6.213 Improvements to these areas should therefore be considered by TfL and LBC to ameliorate baseline pedestrian conditions.

6.6.214 In the 2026 HS2 Phase One scenario, the bus stop on the south side of A501 Euston Road, between A4200 Upper Woburn Place and Gordon Street will be moved approximately 90m east as part of the Proposed Scheme. While the full footway width is adequate for the majority of this link, there remains a local issue, as the clear width at the new bus stop location is still not sufficient given the 1.4m bus stop width and the 1.5m buffer required behind the bus stop to accommodate waiting passengers.

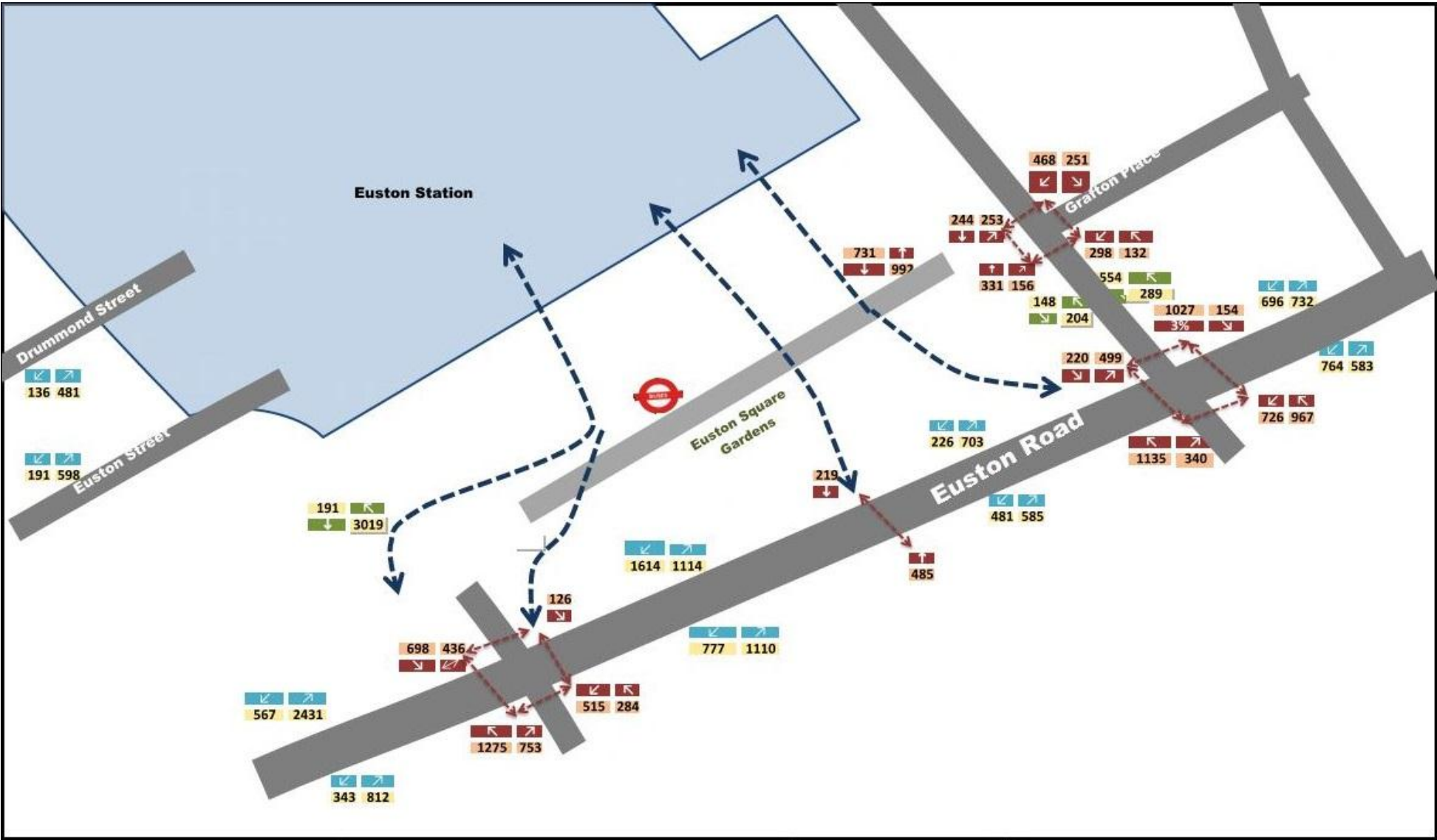
- 6.6.215 Aside from baseline issues identified in Euston Street and Drummond Street and the residual width restriction following relocation of the bus stop, the PCL footway analysis shows that all other footways continue to achieve a PCL level of at least B- in the AM peak hour.
- 6.6.216 The location of street furniture, both existing and proposed, will be discussed with TfL and LBC to ensure that the comfort levels experienced by pedestrians are maximised.

Pedestrians 2041

- 6.6.217 The pedestrian network in 2041 with the Proposed Scheme in operation is assumed to be the same as the pedestrian network for the 2026 scenarios with the Proposed Scheme in operation.
- 6.6.218 The pedestrian demand in 2041 has been derived by taking surveyed peak hour flows on footways and crossings and uplifting these to 2041, based on the difference between Railplan demand and observed flows. In addition, background growth on the street network of 0.5% per year has been assumed, based on LU's Station Demand Modelling guideline document (2005). The AM and PM peak hour pedestrian demand at Euston station can be seen in Figure 6-162 and Figure 6-163.

This map illustrates the bus routes and stops in the Euston Station area. The station itself is a large blue-shaded region in the upper left. Surrounding streets include Drummond Street, Euston Street, Euston Square Gardens, Grafton Place, and Euston Road. The map features numerous bus stop locations, each marked with a red icon and associated route numbers. For example, on Euston Road, routes 145, 205, 287, 591, 194, 645, 366, 1189, 701, 1016, 1611, 881, 324, 121, 180, 478, 472, 183, 565, 269, 107, 1114, 704, 748, 329, 792, 262, 694, 1433, 549, 340, 432, 478, 472, 183, 565, 269, 107, 1114, 704, 748, 329, 792, 262, 694, 1433, 549, 340, 432 are shown. Dashed blue arrows indicate the direction of travel for various routes, showing a complex network of connections between the station and the surrounding urban area.

Figure 6-163: 2041 PM peak hour (17:00-18:00) pedestrian demand



Pedestrian crossing assessment summary

- 6.6.219 For the 2041 with HS2 scenario, the Railplan model results show an increase in overall passenger demand at Euston station of 56% for arrivals and 70% for departures during the AM peak period, and 76% for arrivals and 57% for departures during the PM peak period. As such, there is an increase in demand to all locations of the pedestrian network. However, the new subsurface link beneath A501 Euston Road will reduce the impact of this increase for pedestrian flows on Euston Square and pedestrian flows south on Gordon Street.
- 6.6.220 In general, the new pedestrian layout serves to reduce congestion to the west and south-west of Euston station. However, the additional pedestrian demand to the east of Euston station results in a reduction in pedestrian comfort at pedestrian crossings.
- 6.6.221 Table 6-141 outlines the PCL of each pedestrian crossing in the vicinity of Euston station. This shows the PCL in the 2041 future baseline and 2041 with HS2 scenarios. The locations of each of the crossings can be seen in Figure 6-161.

Table 6-141: 2041 PCL for pedestrian crossings - AM peak hour (07:00-08:00)

No.	Location	Actual width (m)	2041 baseline	2041 'with HS2'	PCL change
1	A4200 Upper Woburn Place at A501 Euston Road	3	B	C+	Decrease
2	Euston Square at A501 Euston Road	3	B	B-	Decrease
3	A501 Euston Road (West) at A4200 Upper Woburn Place	4	C-	C	Increase
4	A501 Euston Road (West) at Euston Square	4	C-	C	Increase
5	A501 Euston Road (East) at A4200 Upper Woburn Place	3	E	E	No change
6	A501 Euston Road	3.3	C+	C+	No change
7	A501 Euston Road (East) at Gordon Street	3	E	B	Increase
8	A501 Euston Road (East) at Gordon Street	3	B	B+	Increase
9	Gordon Street at A501 Euston Road	3	B	-	-
10	Bus station access at A501 Euston Road	3	E	E	No change
11	Bus station access at A501 Euston Road	3	E	A-	Increase
12	Bus station access at A4200 Eversholt Street	3	E	C+	Increase
13	Euston Square at Grafton Way	2.5	C-	D	Increase
14	A4200 Eversholt Street at Grafton Way	2.5	C	C-	Decrease
15	A501 Euston Road at Gordon Street (new crossing)	10	-	B	-

(p/m/m is pedestrians per metre per minute)

6.6.222 The results of the PM peak hour assessment shows that similar PCL will be experienced at the pedestrian crossings, although the direction of peak flow will be reversed. The PM peak hour PCL for pedestrian crossings can be seen in Table 6-142.

Table 6-142: 2041 PCL for pedestrian crossings - PM peak hour (17:00-18:00)

No.	Location	Effective width (m)	2041 baseline	2041 'with HS2'	PCL change
1	A4200 Upper Woburn Place at A501 Euston Road	3	C+	C	Increase
2	Euston Square at A501 Euston Road	3	B+	B-	Decrease
3	A501 Euston Road (West) at A4200 Upper Woburn Place	4	C-	D	Decrease
4	A501 Euston Road (West) at Euston Square	4	D	D	No change
5	A501 Euston Road (East) at A4200 Upper Woburn Place	3	C+	D	Decrease
6	A501 Euston Road	3.3	B	B-	Decrease
7	A501 Euston Road (East) at Gordon Street	3	E	B	Increase
8	A501 Euston Road (East) at Gordon Street	3	B	B+	Increase
9	Gordon Street at A501 Euston Road	3	B+	-	-
10	Bus station access at A501 Euston Road	3	E	E	No change
11	Bus station access at A501 Euston Road	3	D	C-	Increase
12	Bus station access at A4200 Eversholt Street	3	E	B-	Increase
13	Euston Square at Grafton Way	2.5	C	C-	Decrease
14	A4200 Eversholt Street at Grafton Way	2.5	B	B-	Decrease
15	A501 Euston Road at Gordon Street (new crossing)	10	-	B	-

(p/m/m is pedestrians per metre per minute)

6.6.223 A summary of the results of the pedestrian crossing assessment are:

- an improvement for north to south flows across A501 Euston Road at Gordon Street on the east side. This improvement is a result of the provision of subsurface link beneath A501 Euston Road and the new pedestrian crossing on A501 Euston Road to the west of Gordon Street;
- an improvement on the pedestrian crossing at the new bus station entrance during the AM peak hour. The improvement here is generated by reconfiguration of the external concourse to facilitate flows to the west along A501 Euston Road, as well as the subsurface link beneath A501 Euston Road;
- a reduction in the PCL for the east to west crossing on Grafton Place at A4200 Eversholt Street reflecting the increase in demand and the lack of an alternative pedestrian route; and

- a reduction in congestion at the north to south crossing on the west side of the junction of A4200 Eversholt Street with Grafton Place, due to the new pedestrian link through Euston Square Gardens and the pedestrian crossings through the new Euston bus station.

6.6.224 Further analysis shows that widening crossings enables more acceptable PCL values. This could also be achieved by the provision of signage and re-routing pedestrians. Crossing widening needs to be considered in line with traffic conditions and local area restrictions (e.g. access to and from the Euston Road fire station).

Pedestrian footway assessment summary

6.6.225 A number of footways within the vicinity of Euston station have been assessed to understand the PCL when the Proposed Scheme is in operation in 2041.

6.6.226 The assessment shows that the majority of streets in the vicinity of Euston station have footway widths that can comfortably accommodate their users in the 2041 future baseline scenario and with HS2 Phase Two demand.

6.6.227 As in the 2026 assessment there are however a small number of existing issues, where inadequate widths have been identified.

6.6.228 This firstly relates the A501 Euston Road where the presence of bus stops reduces the clear width available below the minimum required. Secondly, multiple locations on Euston Street and Drummond Street are identified where inadequate clear width is provided due to the narrow footway widths on Euston Street and Drummond Street (all PCL F). In various locations the footway width is further reduced by the presence of street furniture.

6.6.229 Improvements to these areas should therefore be considered by TfL and LBC to ameliorate baseline pedestrian conditions.

6.6.230 In the 2041 HS2 Phase Two scenario, the bus stop on the south side of A501 Euston Road between A4200 Upper Woburn Place and Gordon Street will be moved approximately 90m east as part of the Proposed Scheme. While the full footway width is adequate for the majority of this link, there remains a local issue, as the clear width at the new bus stop location is still not sufficient given the 1.4m bus stop width and the 1.5m buffer required behind the bus stop to accommodate waiting passengers.

6.6.231 The 2041 with HS2 Phase Two demand results add additional demands above those shown in the 2041 baseline scenario; but all pedestrian flows experience a PCL B- or above, with the exception of the footways which show a PCL F as noted previously.

6.6.232 Aside from baseline issues identified in Euston Street and Drummond Street and the residual width restriction following relocation of the bus stop, the PCL footway analysis shows that all other footways continue to achieve a PCL level of at least B- in the AM peak hour.

6.6.233 The location of street furniture, both existing and proposed, will be discussed with TfL and LBC to ensure that the comfort levels experienced by pedestrians are maximised.

Pedestrian sensitivity test

6.6.234 As discussed and agreed with TfL, a sensitivity test has been undertaken to assess the impact of a higher walk mode share on pedestrian comfort levels. This comprises a 25% uplift in demand across all pedestrians, including both commuters and long distance high-speed passengers. This increases the onward mode share for commuter rail from 25% to over 30% and for long distance high speed passenger from 16% to 20%, giving an average rail-related onwards walk mode share of approximately 25%.

6.6.235 This test has been undertaken for both 2026 and 2041 with and without the Proposed Scheme.

6.6.236 In terms of pedestrian crossings, PCL values of E are shown at the following crossings for 2012 baseline scenario:

- A501 Euston Road junction with A4200 Eversholt Street and A4200 Upper Woburn Place on the east and north sides;
- A501 Euston Road junction with Gordon Street on the east side;
- the west side of the A4200 Eversholt Street junction with Grafton Place; and
- A501 Euston Road junction with Melton Street.

6.6.237 In the future baseline scenarios, the 25% uplift scenario shows PCL values on other crossings deteriorating to PCL E also. These include the south side of A501 Euston Road, crossing east and west across the north end of Gordon Street, in 2026 and, by 2041, the western crossing from A4200 Upper Woburn Place, north-south across A501 Euston Road, and the southern east-west crossing over A4200 Eversholt Street to Grafton Place.

6.6.238 With the Proposed Scheme in operation in 2026 and 2041, the north end of Gordon Street is closed to vehicular traffic and so the PCL value of E substantially improves. However, to the east, the western crossing from A4200 Upper Woburn Place, north to south across A501 Euston Road and both east to west crossings over A4200 Eversholt Street to Grafton Place show, a PCL E.

- 6.6.239 These results indicate that, even without the Proposed Scheme, enhancements to crossing widths and signal timings would be required to the east of Euston station when assuming a higher walk mode share into the future.
- 6.6.240 In terms of footways, the narrow pavement areas identified in the base modelling continue to show PCL F, namely A501 Euston Road around bus-stops and other street furniture, Euston Street and Drummond Street. In the future baseline scenarios, the 25% uplift scenario shows PCL values of PCL B or better for all other footways.
- 6.6.241 In the 2026 HS2 Phase One scenario, PCL values of C+ are shown in 2026 on the southern side of A501 Euston Road, approaching Gordon Street from the east. The pavement is narrower here than further east and is unchanged from its current width. A PCL of C+ is also shown on the northern side of A501 Euston Road at entry points through Euston Square Gardens into the bus station.
- 6.6.242 By 2041, pedestrian comfort has degraded further to PCL C. The flow rate for PCL B-, considered acceptable, is 17 pedestrians per metre per minute. A PCL of C is between 21 and 23 pedestrians per metre per minute.
- 6.6.243 In general, the PM peak hour results reflect the AM peak hour, with the direction of flow reversed.

Cycling 2026

Cycle network

- 6.6.244 When the Proposed Scheme is in operation, all existing cycle routes will be reinstated. Euston station will also be served by two new cycle routes which connect to the open public space at the northwest entrance of the station, passing the station's main cycle parking area. These routes are:
- a north to south 'quietway' cycle route linking Mornington Crescent to Tavistock Place/Gordon Square, which replaces unofficial LCN Route 6a. The route travels along the following alignment:
 - shared bus and cycle lanes or protected cycle lanes on A400 Hampstead Road overbridge, subject to the developing structural design of the bridge;
 - shared cycle/pedestrian route in the public space at Euston station's northwest entrance, passing the new station's cycle parking area;
 - segregated cycle track on the realigned Cobourg Street on the west side of Euston station, separating cyclists from the busy taxi pick-up area;
 - shared pedestrian/cycle route in the public space at Euston station's southwest entrance;
 - cyclists cross A501 Euston Road at Gordon Street, as vehicles, rather than mixing

with pedestrians on busy crossings;

- north end of Gordon Street closed to motor vehicles, creating a shared pedestrian/cycle route; and
- links to Tavistock Place/Gordon Square, east to west LCN route.
- a new east-west 'quietway' cycle route linking Regent's Park to King's Cross St Pancras. The route travels along the following alignment:
 - shared pedestrian/cycle ramp at the east end of Varndell Street which will be closed to motor vehicles;
 - cyclists cross A400 Hampstead Road using a new Toucan crossing;
 - shared cycle/pedestrian route in the public space at Euston station's northwest entrance, passing the station's cycle parking area;
 - East West overbridge across the north side of Euston station provides a missing link in the cycle network, reducing severance;
 - cyclists cross A4200 Eversholt Street by turning right, then left, into Polygon Road, which is easier for cyclists than making right turns while on the busy A4200 Eversholt Street; and
 - links to Ossulston Street north to south LCN route.

6.6.245 The East West overbridge reduces cycling journeys by up to 400m or two minutes. By linking westward to Regent's Park Outer Circle and eastward to Ossulston Street, the new east-west 'quietway' would relieve pressure on the crowded east to west Tavistock Place cycle track. It could form part of the Central London Bike Grid and 'Circle Line quietway'. The East West overbridge will also improve the permeability in this direction for cyclists, connecting the north-west side of the station to A4200 Eversholt Street via Barnby Street. This is likely to reduce the number of cyclists travelling along A501 Euston Road.

6.6.246 These proposals would help encourage the use of Euston station's northwest entrance. 32% of cyclists travel west or east from Euston station, in addition to the 8% travelling north and those who head south along A400 Hampstead Road. In addition, the proposals respond to changing plans within the Euston Area Plan and strengthening links to Camden Town.

Cycle network demand

6.6.247 Many stakeholders, including TfL, predict a growth in cycle mode share from mainline stations. The current cycle mode share at Euston station is between 2% and 3%. Following consultation with TfL, a 7% mode share scenario has been used to inform the assessment and design of cycle facilities. The demand is based on the existing mode share and an uplift to 7% are presented in this section.

6.6.248 The Railplan model results have been used to calculate a scale factor based on the estimated change in rail passenger numbers and any change in cycle mode share. The cycle trip generation for the Proposed Scheme has been estimated by applying this scale factor to the 2012 cycle trips.

6.6.249 Table 6-143 shows the scale factors and Table 6-144 shows the resulting weekday cycle trip generation.

Table 6-143: 2026 weekday cycle trip generation scale factors from baseline

Case and scenario		AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
		To Euston	From Euston	To Euston	From Euston
Based on existing cycle mode share	2026 baseline	1.46	1.27	1.35	1.22
	2026 'with HS2'	1.64	1.54	1.80	1.45
Based on 7% cycle mode share	2026 baseline	13.14	6.13	11.85	9.13
	2026 'with HS2'	14.77	7.56	14.85	10.78

Table 6-144: 2026 weekday cycle trip generation

Case and secenario		AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
		Trips to Euston	Trips from Euston	Trips to Euston	Trips from Euston
Based on existing cycle mode share	2026 baseline	44	202	166	28
	2026 'with HS2'	49	245	221	33
	Change (in cyclists with HS2)	5	43	55	5
Based on 7% cycle mode share	2026 baseline	394	975	1,458	210
	2026 'with HS2'	443	1,202	1,827	248
	Change (in cyclists with HS2)	49	227	369	38

6.6.250 Table 6-145 shows the estimated split between different types of cycle for the 7% cycle mode share scenario. This is based on the existing split between different types of cyclists.

Table 6-145: 2026 weekday cycle trip generation - 7% cycle mode share

Case and secenario	AM peak hour (08:00-09:00)				PM peak hour (17:00-18:00)			
	To Euston		From Euston		To Euston		From Euston	
	No. trips	% of total	No. trips	% of total	No. trips	% of total	No. trips	% of total
Folding bicycles taken on train	59	13.3%	431	35.9%	624	34.2%	22	8.7%
Non-folding bicycles taken on train	133	30.0%	113	9.4%	252	13.8%	54	21.7%
Non-folding bicycles parked at station	118	26.7%	212	17.6%	282	15.5%	108	43.5%
Cycle hire	133	30.0%	446	37.1%	668	36.6%	65	26.1%
Total cyclists	443	100.0%	1202	100.0%	1,827	100.0%	248	100.0%

- 6.6.251 In the 2026 HS2 Phase One scenario, it is proposed to revise the assumed allocation of Euston station's cycle trip generation to the cycle network, to reflect the new station entrances and proportions of passengers using those entrances and to reflect the provision of new cycle routes, parking and hire facilities.
- 6.6.252 Surveys show that 45% of cyclists carry their cycle on a train, which could be a folding or non-folding cycle (subject to the train operator's policy and/or reservations). These cyclists do not use the station's cycle parking or hire facilities, and will be assumed to use the station entrance nearest their platform. In 2026, 30% of AM peak period alighting passengers and PM peak period boarding passengers use the HS2 platforms and 70% use the conventional platforms. From the Hs2 platforms, passengers have been assumed to split equally between the northwest and southwest entrances. From the conventional platforms, passengers have been assumed to split equally between the southwest and southeast entrance.
- 6.6.253 Surveys show that 45% of cyclists collect a cycle at the station, which could be a parked non-folding cycle or Barclays Cycle Hire. These cyclists will be influenced by the location of the station's cycle parking and hire facilities. It is assumed that the split of these cyclists between station entrances reflects the proportion of cycle parking/hire facilities nearest each entrance.
- 6.6.254

- 6.6.255 Table 6-146 shows the weighted average of the two distributions of cyclists between station entrances. The assumed distribution informs the assessment and design, but can only be approximated and, consequently, all percentages are rounded to the nearest 2.5%.
- 6.6.256 The cyclists from each station entrance are then distributed to ten points on the cycle network, in accordance with cyclist destination survey information and in reflection of the new cycle routes provided by the scheme.

Table 6-146: 2026 cycle trip distribution

Type	Northwest entrance	Southwest entrance	Southeast entrance	All station entrances
Passengers who carry cycles on train	15.0%	50.0%	35.0%	100.0%
Passengers who collect cycles at station	50.0%	27.5%	22.5%	100.0%
Weighted average between entrances	35.0%	37.5%	27.5%	100.0%
Road				
A4200 Eversholt Street (north)	-	-	5.0%	5.0%
Polygon Road	5.0%	-	5.0%	10.0%
A501 Euston Road (east)	-	2.5%	2.5%	5.0%
A4200 Upper Woburn Place	-	-	15.0%	15.0%
Gordon Street	7.5%	17.5%	-	25.0%
A400 Tottenham Court Road/Gower Street	7.5%	2.5%	-	10.0%
A501 Marylebone Road	2.5%	2.5%	-	5.0%
Drummond Street	2.5%	7.5%	-	10.0%
Varndell Street	7.5%	2.5%	-	10.0%
A400Hampstead Road (north)	2.5%	2.5%	-	5.0%

6.6.257 In the baseline scenario the allocation of Euston station's cycle trip generation to the cycle network is assumed to remain the same as the existing allocation.

6.6.258 The local highway capacity assessment has been based on the 7% cycle mode share scenario and this has also informed the design of proposed facilities to meet Euston Station's cycle demand.

Cycle parking

6.6.259 In consultation with TfL and following a thorough review of available space in and around the proposed Euston station design, it is assumed that 2,000 cycle parking spaces are provided as part of HS2 Phase One in 2026.

6.6.260 Staff cycle parking will be provided in addition to the total above, and would include showers and lockers. The capacity of staff cycle parking is still to be determined, in consultation with operators based on the numbers and types of staff (e.g. retail, office, train crews), but is proposed to be located on the service deck at the north-east corner of the station.

- 6.6.261 A phased approach to cycle parking capacity will be adopted. The 2,000 cycle parking spaces provided in HS2 Phase One are a substantial uplift above the existing cycle parking provision and will promote growth. It is likely that the uptake of these spaces will be gradual. Travel Plan measures would include monitoring of the cycle parking occupancy to inform HS2 Phase Two cycle parking capacity.

Cycle hire

- 6.6.262 In addition to the 249 docking points provided by the nine docking stations nearest to Euston Station, 169 new docking points will be created at four new docking stations:
- adjacent to St James' Gardens, near Euston station's northwest entrance;
 - on the west side of Cobourg Street, near Euston station's southwest entrance;
 - on A4200 Eversholt Street; and
 - at the north end of Gordon Street.

Cycling 2041

Cycle network

- 6.6.263 As for 2026, the Railplan model results have been used to estimate a scale factor based on the estimated change in rail passenger numbers and any change in cycle mode share. The 2041 cycle trip generation has been estimated by applying this scale factor to the 2012 cycle trip generation.
- 6.6.264 Table 6-147 shows the scale factors and Table 6-148 shows the resulting 2041 weekday cycle trip generation.

Table 6-147: 2041 weekday cycle trip generation scale factors

Case and scenario		AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
		To Euston	From Euston	To Euston	From Euston
Based on existing cycle mode share	2041 baseline	1.76	1.55	1.74	1.47
	2041 'with HS2'	3.03	2.31	3.07	2.97
Based on 7% cycle mode share	2041 baseline	15.94	7.52	15.00	11.77
	2041 'with HS2'	27.03	11.75	23.47	20.72

Table 6-148: 2041 weekday cycle trip generation

Case and scenario		AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
		To Euston	From Euston	To Euston	From Euston
Based on existing cycle mode share	2041 baseline	53	246	214	34
	2041 'with HS2'	91	367	378	68

Case and scenario		AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
	Change (in cyclists)	38	121	164	34
Based on 7% cycle mode share	2041 baseline	478	1,196	1,845	271
	2041 'with HS2'	811	1,868	2,887	477
	Change (in cyclists)	333	672	1,042	206

6.6.265 Table 6-149 shows the estimated split between different types of cycle for the 7% cycle mode share scenario. This is based on the existing split between different types of cycle.

Table 6-149: 2041 weekday cycle trip generation - 7% cycle mode share

Type	AM peak hour (08:00-09:00)				PM peak hour (17:00-18:00)			
	To Euston		From Euston		To Euston		From Euston	
	No. trips	% of total	No. trips	% of total	No. trips	% of total	No. trips	% of total
Folding bicycles taken on train	108	13.3%	670	35.9%	986	34.2%	41	8.7%
Non-folding bicycles taken on train	243	30.0%	176	9.4%	399	13.8%	104	21.7%
Non-folding bicycles parked at station	216	26.7%	329	17.6%	446	15.5%	207	43.5%
Cycle hire	243	30.0%	693	37.1%	1056	36.6%	124	26.1%
Total cyclists	811	100.0%	1868	100.0%	2887	100.0%	477	100.0%

- 6.6.267 As for 2026, for the HS2 Phase Two scenario, the assumed allocation of Euston station's cycle trips to the cycle network has been revised, to reflect the new station entrances and proportions of passengers using those entrances, and to reflect the provision of new cycle routes, parking and hire facilities.
- 6.6.268 In 2041, 45% of AM peak period alighting passengers and PM peak period passengers use the HS2 platforms and 55% use the conventional platforms.
- 6.6.269 By following the methodology set out for 2026, this leads to a slightly higher proportion of cyclists using the northwest entrance and a slightly lower proportion of cyclists using the southeast entrance. The distribution of cyclists from each station entrance to the cycle network reflects this slight change, with the northwest entrance/southeast entrance split for the Varndell Street route amended. This is shown in Table 6-150.

Table 6-150: 2041 cycle trip distribution

Type	Northwest entrance	Southwest entrance	Southeast entrance	All station entrances
Passengers who carry cycles on train	22.5%	50.0%	27.5%	100.0%
Passengers who collect cycles at station	50.0%	27.5%	22.5%	100.0%
Weighted average between entrances	37.5%	37.5%	25.0%	100.0%
Road				
A4200 Eversholt Street (north)	-	-	5.0%	5.0%
Polygon Road	7.5%	-	2.5%	10.0%
A501 Euston Road (east)	-	2.5%	2.5%	5.0%
A4200 Upper Woburn Place	-	-	15.0%	15.0%
Gordon Street	7.5%	17.5%	-	25.0%
A400 Tottenham Court Road/Gower Street	7.5%	2.5%	-	10.0%

Type	Northwest entrance	Southwest entrance	Southeast entrance	All station entrances
A501 Marylebone Road	2.5%	2.5%	-	5.0%
Drummond Street	2.5%	7.5%	-	10.0%
Varndell Street	7.5%	2.5%	-	10.0%
A400Hampstead Road (north)	2.5%	2.5%	-	5.0%

6.6.270 The highway capacity assessment has been based on the 7% cycle mode share scenario and this has also informed the design of proposed facilities to meet Euston station's cycle demand.

Cycle parking

6.6.271 A phased approach to cycle parking capacity is proposed. The 2,000 cycle parking spaces provided in HS2 Phase One in 2026 will be a substantial uplift above existing facilities. It is likely that the uptake of these spaces will be gradual. Travel Plan measures would include monitoring of the cycle parking occupancy to inform HS2 Phase Two cycle parking capacity and the requirement to provide additional cycle parking spaces, if appropriate. A similar approach will be adopted to monitor demand for Barclays Cycle Hire spaces.

6.6.272 Cycle parking near Euston station's northwest entrance has been planned to allow an increased capacity in HS2 Phase Two, in line with the forecast increase in passengers using the adjacent HS2 platforms.

Taxis and private hire

Taxis

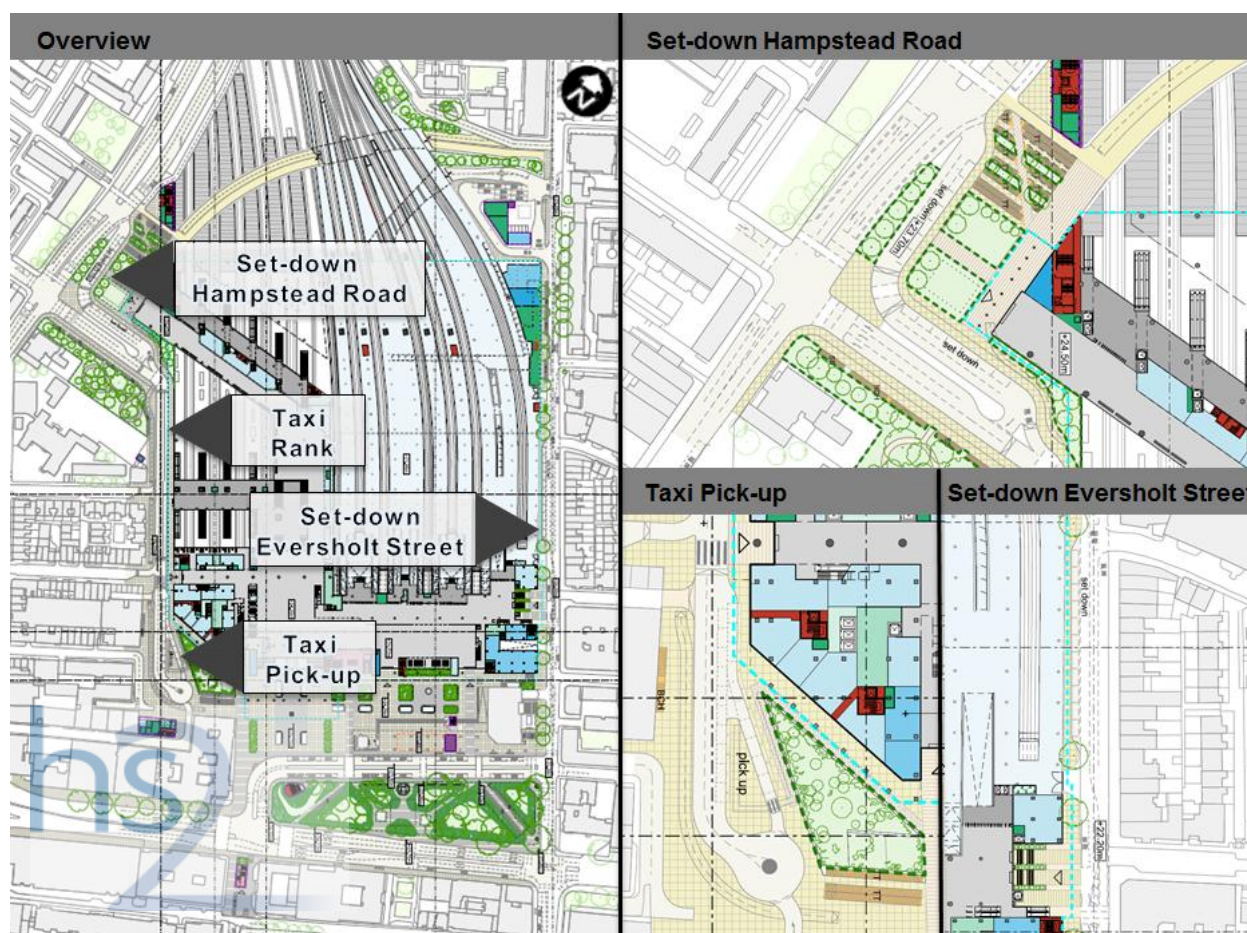
6.6.273 Figure 6-164 shows the proposed taxi and private hire pick-up and set-down facilities at Euston station along, with the location of the proposed taxi rank.

6.6.274 Taxis and private vehicles can access the set-down facility from the south and north on A400 Hampstead Road via a new signalised junction north of Robert Street. The passenger set-down will be located adjacent to the northwest entrance to Euston station and will comprise the following:

- seven marked set-down bays;
- seven informal set-down bays;
- three disabled set-down/pick-up bays; and
- five pre-booked private vehicle pick-up spaces.

- 6.6.275 From the set-down area, taxis and private vehicles will be able to exit, via a U-turn facility, to return to A400 Hampstead Road or Robert Street. For those taxis that have dropped passengers off and wish to pick-up passengers, a route is provided so that they will be able to continue south on Cobourg Street to join the back of the rank. The ranking space will be for taxis only (southbound on Cobourg Street) and allows for double ranking of approximately 64 taxis (not including pick-up spaces).
- 6.6.276 From the rank, taxis will be fed into the taxi passenger pick-up area located south of Drummond Street on Cobourg Street. There will be a total of 10 designated taxi pick-up bays, six of these will be for standard and four for shared pick-up. It is likely that the shared-pick up will be in operation during peak periods with marshals present to manage the facility.
- 6.6.277 After passenger pick-up, taxis will be required to utilise the u-turning facility provided at the southern end of Cobourg Street, in order to continue their journey and exit onto A400 Hampstead Road.

Figure 6-164: Proposed scheme taxi set-down facility



- 6.6.278 Table 6-151 shows the forecast demand for both conventional and HS2 passengers that will be dropped-off or picked-up by taxi at Euston station. The tables show the demand for both the AM and PM peak hours.

Table 6-151: 2026 and 2041 taxi passenger demand

Scenario	Period	Conventional rail and Underground		HS2		Total	
		Drop-off at station	Pick-up from station	Drop-off at station	Pick-up from station	Drop-off at station	Pick-up from station
2026 HS2 Phase One	AM peak hour (08:00-09:00)	95	365	210	263	305	628
	PM peak hour (17:00-18:00)	382	208	336	193	718	401
2041 HS2 Phase Two	AM peak hour (08:00-09:00)	117	464	460	622	577	1,086
	PM peak hour (17:00-18:00)	504	282	727	455	1,231	737

6.6.279 Table 6-152 and Table 6-153 show the expected number of taxi movements that will be required to cater for the forecast number of passengers picked-up and set-down at Euston station. The taxi occupancy rates used for this assessment are as follows:

- Taxi occupancy rate of 2.2 for trips from the station and 1.5 for trips to the station during the AM peak hour²; and
- Taxi occupancy rate of 1.6 for trips from the station and 1.9 for trips to the station during the PM peak hour³.

6.6.280 The future taxi trip generation assumes improved taxi circulation at the station, a reduction in empty taxi movements and the implementation of a taxi share scheme to reduce the overall number of taxi movements.

Table 6-152: 2026 Hs2 Phase One forecast peak hour taxi set down and pick up (vehicles) from all rail

Case	AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
	Pick-up from station	Drop-off at station	Pick-up from station	Drop-off at station
Conventional rail and LU	165	63	130	201
HS2 Phase One	120	140	121	177
Total	285	203	251	378

Table 6-153: 2041 Hs2 Phase Two Forecast peak hour taxi set down and pick up (vehicles) from all rail

Case	AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
	Pick-up from station	Drop-off at station	Pick-up from station	Drop-off at station

² Aspirational taxi occupancy based on the assumptions that taxi circulation will be improved and the implementation of a taxi share scheme.

³ Based on the 2012 baseline taxi occupancy surveys

Case	AM peak hour (08:00-09:00)		PM peak hour (17:00-18:00)	
Conventional rail and LU	211	78	176	265
HS2 Phase One	283	307	285	383
Total	494	385	461	648

6.6.281 Figure 6-165 shows the expected taxi distribution for the 2026 with HS2 scheme, for both the AM and PM peak hours. The taxi distribution was calculated by using Central London Highways Assignment Model (CLoHAM) using SATURN.

Figure 6-165: 2026 AM (08:00-09:00) and PM (17:00-18:00) peak hour taxi distribution



6.6.282 The following taxi distribution assumptions have been made during the analysis. These are as follows:

- Surveys show that approximately 50% of taxis currently continue onto the taxi rank from set down at Euston station. This is also been observed at other taxi facilities such as Kings Cross and Paddington Station. The Proposed Scheme at Euston station proposes a taxi system that helps increase this to an expected 70% of set-down taxis at the A400 Hampstead Road facility continue on to the taxi rank for pick-up. The remaining 30% exit the taxi facility via A400 Hampstead Road or Robert Street;
- 40% of set-down taxis at the A4200 Eversholt Street facility head to the taxi rank for pick-up via A4200 Eversholt Street, A400 Lidlington Place and A400 Hampstead Road. The remaining 60% exit the taxi facility. This is based on the existing surveys that show approximately 50% continue onto the taxi rank, and the location of the set-down facility in relation to the taxi rank; and
- Approximately 71% and 29% of all taxis setting-down, will use the A400 Hampstead Road and A4200 Eversholt Street set-down facility, respectively. This is based on existing data obtained from the 2012 O-D survey.

Private car

6.6.283 Table 6-154 and Table 6-155 show the forecast passenger and vehicle set-down and pick-up demand for both conventional/LU and HS2 by private vehicle at Euston station.

Table 6-154: 2026 Private vehicle passenger and vehicle demand

Demand type	Period	Conventional rail and Underground		HS2		Total	
		Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)
Passenger	AM peak hour (08:00-09:00)	46	15	21	<1	67	15
	PM peak hour (17:00-18:00)	48	18	10	<1	58	18
Vehicle	AM peak hour (08:00-09:00)	29	12	13	<1	42	12
	PM peak hour (17:00-18:00)	22	16	5	<1	27	16

Table 6-155: 2041 Private vehicle passenger and vehicle demand

Demand Type	Period	Conventional rail and underground		HS2		Total	
		Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)
Passenger	AM peak hour (08:00-09:00)	61	19	46	<1	107	19
	PM peak hour (17:00-18:00)	64	24	22	<1	86	24

Demand Type	Period	Conventional rail and underground		HS2		Total	
		Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)	Boarders (set-down)	Alighters (pick-up)
Vehicle	AM peak hour (08:00-09:00)	38	16	29	<1	67	16
	PM peak hour (17:00-18:00)	30	22	10	<1	40	22

6.6.284 The private vehicle occupancy rates used in Table 6-154 and Table 6-155 are as follows:

- Private vehicle occupancy rate of 1.2 for trips from the station and 1.6 for trips to the station during the AM peak hour; and
- Private vehicle occupancy rate of 1.1 for trips from the station and 2.1 for trips to the station during the PM peak hour.

6.6.285 Set-down facilities will be provided for private vehicles on A4200 Eversholt Street and close to the new north-west entrance to the Euston station.

Parking

Short stay parking at Euston station

6.6.286 There will be no short stay parking facilities provided as part of the Proposed Scheme. Private vehicles will be able to drop-off passengers at the station using the facility at the north-west side of the station (near the entrance on A400 Hampstead Road and A4200 Eversholt Street). Private vehicles will not be able to travel southbound on Cobourg Street, upon exiting the drop-off facilities, as this section of highway will be designated for taxi use only for ranking and pick-up.

6.6.287 Three disabled parking spaces will, however, be provided as part of the Proposed Scheme. This will be provided as part of the taxi and private vehicle set-down area close to the northwest entrance of the station.

Off-street long stay demand

6.6.288 The existing basement car park facility at Euston station (216 spaces) is not being re-provided as part of the Proposed Scheme. Therefore, the Proposed Scheme will not generate any long stay parking demand at the station.

6.6.289 In addition, due to the enlargement of the station footprint as part of the Proposed Scheme, the public car park at the Ibis Hotel (100 spaces) will be removed. Existing vehicle trips associated with the Ibis Hotel will not occur when the Proposed Scheme is in operation.

Displaced on-street demand

6.6.290 The Proposed Scheme will result in the loss of 107 on-street spaces as a result of the increased station footprint, as described in Table 6-156.

Table 6-156: On-street parking loss due to the Proposed Scheme

Location	Coach	Resident permit	Pay and display	Motorcycle	Car club	Loading	Bus stand
Melton Street					4		2
Cardington Street	1		51		1		
Euston Street			4				
Drummond Street		3	3	8		1	
Cobourg Street		17					
Gordon Street						2	
Mornington Crescent			3				

6.6.291 Due to the loss of a number of buildings along Cobourg Street, Drummond Street and Euston Street, the demand for parking associated with these buildings will not be present when the Proposed Scheme is in operation.

6.6.292 In addition, due to the need to raise A400 Hampstead Road overbridge whilst keeping access to adjacent buildings on Mornington Crescent accessible, a two tier footway is proposed. This level change results in the need to widen the existing footways and extend the current footway build-outs at the junction of Mornington Crescent with A400 Hampstead Road. As a consequence, three pay and display parking bays on Mornington Crescent will be removed.

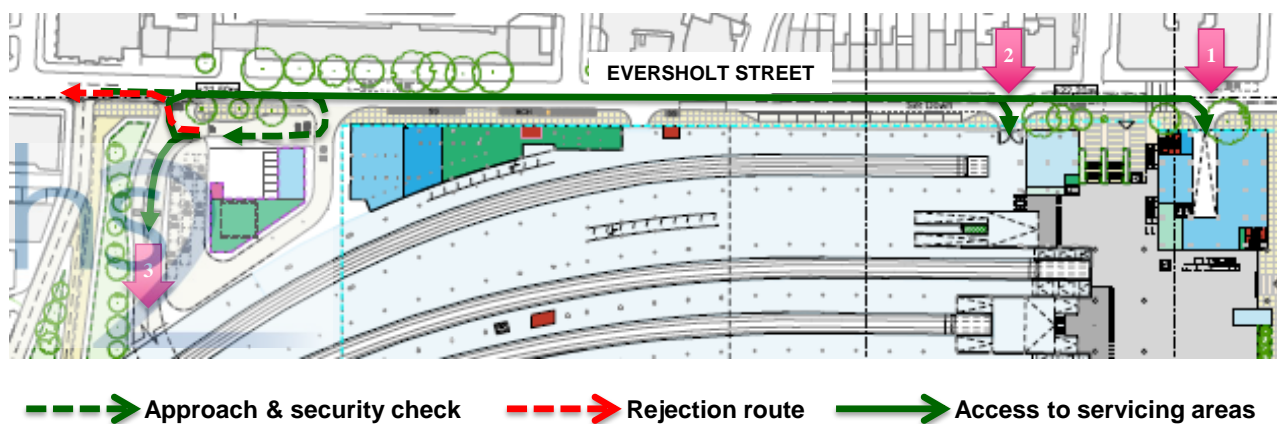
Station servicing

Servicing strategy

6.6.293 On arrival at Euston station, all delivery and servicing vehicles will be directed to a security control point on A4200 Eversholt Street, at the northeast corner of the station. Following the necessary security checks, vehicles will be directed to one of three servicing locations. These are shown on Figure 6-166 and are

- The conventional concourse building service basement;
- Gate L (location 2 on Figure 6-166) delivery and servicing area adjacent to Platform 1; and
- The service deck at the north-east corner of the station.

Figure 6-166: Delivery and servicing arrangements



Delivery and servicing vehicle generation

6.6.294 It is estimated that the Proposed Scheme will generate approximately 170 delivery and servicing vehicles per day, equating to approximately 340 two-way vehicle trips per day. This level of servicing represents the maximum growth scenario in 2041. For the purposes of this assessment and, in particular, the highway modelling, the maximum growth scenario has also been assumed for 2026.

Conventional concourse service basement

6.6.295 The conventional concourse service basement will primarily be used for servicing retail and catering operators operating on the conventional and high speed concourses at the southern end of the station. Any servicing requirements for LU will also be catered for in the conventional concourse service basement.

6.6.296 The service basement is subject to a head room constraint of approximately 3.35m and, as such, access will be limited to vehicles up to 8m in length. It is estimated that upon completion of the Proposed Development, approximately 60% of the delivery and servicing vehicles could access the conventional concourse service basement.

6.6.297 Access to the conventional concourse service basement will be provided via a traffic signal controlled single lane entry/exit ramp on A4200 Eversholt Street. The layout of this service area, including the access, is shown on Figure 6-167.

6.6.298 The service area will provide five loading bays and one service/maintenance bay. It is anticipated that the service area will cater for 103 servicing trips per day with a peak of 18 trips between 06:00 and 07:00.

Figure 6-167: Conventional concourse service basement



Gate L service area

- 6.6.299 The Gate L (as shown in Figure 6-168) delivery and servicing area is not subject to a headroom constraint and will, therefore, be capable of accommodating 16.5m articulated vehicles and 10m rigid vehicles. This service area will primarily be used by larger vehicles servicing retail units that are located at the southern end of the station, as well as some of LU's servicing requirements.
- 6.6.300 It is estimated that, upon completion of the Proposed Scheme, the Gate L servicing area will cater for approximately 5% of the total servicing requirements for the station. This equates to approximately eight vehicles per day.

Figure 6-168: Gate L service area



Service deck

- 6.6.301 The service deck delivery and servicing area, located at the northeast corner of the station, will be used for service retail and catering operators on the high speed and conventional concourses towards the northern side of the station. This area is not subject to a headroom constraint and can, therefore, accommodate 16.5m articulated and 10-12m rigid vehicles.
- 6.6.302 It is estimated that, upon completion of the Proposed Scheme, the service deck could accommodate 20-30% of the total servicing requirements for the station. This equates to approximately 35 to 50 servicing and delivery vehicles per day with a peak of nine vehicles between 09:00 and 10:00.
- 6.6.303 The service deck has been designed to accommodate three waste compactor bays, three bays to accommodate 10m rigid vehicles or 16.5m articulated vehicles, five bays for 6m and 8m rigid vehicles and six service/maintenance bays.
- 6.6.304 Access to the service deck, for delivery and servicing vehicles, will be provided directly from the security control point on A4200 Eversholt Street. Access will be via a two lane entry/exit ramp.

6.6.305 The location and operation of the service deck can be seen in Figure 6-169.

Figure 6-169: Service deck service area



Highway network

6.6.306 A number of highway changes have been identified that will be implemented when the Proposed Scheme is in operation. These include the removal of station parking, new arrangements for set down and pick up of taxi passengers and from private vehicles, the remodelled bus station and physical changes to the highway layout.

6.6.307 The impacts of the Proposed Scheme on the highway network have been assessed by undertaking CLoHAM model runs for the 2026 and 2041 'with HS2' scenario, and comparing the flows and delays against the corresponding 2026 and 2041 future baseline scenarios.

6.6.308 Changes have been made within the CLoHAM strategic model by adjusting the demand matrices for removal of station car parking, removal of residential and business demand from areas falling within the new station footprint, and increased taxi provision. The networks have been modified in order to reflect changes to the road network including road closures, realigned roads and changes to junction operations.

*Highway network analysis 2026***Strategic highway assessment model analysis**

- 6.6.309 Junction capacity analysis has been undertaken for the AM and PM peak periods comparing junction operation in the 2026 future baseline scenario with the 2026 Phase One scenario. The assessment of junctions is based on the relationship of flow to capacity measured as the Volume Capacity (VoC) ratio. As junction operation varies depending on the time of day, certain junctions may be affected in the AM peak hour but not in the PM peak hour or vice versa. Therefore, the AM and PM peak results have been combined so that any junction impacted in either peak is reported.
- 6.6.310 Junctions which experience an impact as a result of the Proposed Scheme are identified using the following criteria:
- the VoC for an approach arm increases to over 87% during the operation of the Proposed Scheme; or
 - the VoC for an approach arm is over 87% in the baseline and during the operation of the Proposed Scheme increases by 2% or more.
- 6.6.311 The results of the 2026 assessment indicate that nine junctions are affected by the Proposed Scheme. These junctions are shown in Table 6-157.

Table 6-157: 2026 AM and PM peak hour impacted junctions

Junction	Control type
A400 Gower Street/Torrington Place	Signal
A400 Tottenham Court Road/Torrington Place	Signal
A401 Theobald's Road/A5200 Gray's Inn Road	Signal
A4201 Albany Street/Osnaburgh Terrace	Signal
A501 Euston Road (westbound)/A400 Hampstead Road	Signal
A501 Euston Road/A400 Gower Street	Signal
A501 Euston Road/Euston bus station access	Signal
A5200 Gray's Inn Road/A201 Swinton Street	Signal
B506 Great Portland Street/New Cavendish Street	Signal

- 6.6.312 Further analysis of the junctions shown in Table 6-157 that are close to Euston station is provided in the assessment of the local highway network.

6.6.313 Most signalised junctions in central London are under adaptive control, such as Split Cycle Offset and Optimisation Technique (SCOOT), which will optimise the signal stages in real time. Therefore, if the pattern of movement changes across a network rather than where there is a net increase in traffic at a particular junction, many of those junctions that are impacted will be mitigated through careful adaptive control techniques. The adaptive control would, however, also react to increases in traffic flows within certain limits (i.e. so that a junction will operate at its most efficient and not favouring just one approach). This has been reflected in the local modelling by optimising the affected junctions.

6.6.314 The impacted junctions that were signalised were locally optimised in SATURN (not using a full reassignment) to represent how the junction operation could improve with revised green times but with the same overall cycle time. This indicated that the VoC would reduce below the 87% threshold in the 'with HS2' scenario at some junctions.

Strategic and local road network flows 2026

6.6.315 The traffic flow impacts of the Proposed Scheme were assessed strategically through CLOHAM by comparing the change in traffic flow between the 2026 future baseline and 'with HS2' scenarios. The flow differences for the AM and PM peak hours are shown in Figure 6-170 and Figure 6-171 respectively. The width of the band indicates the proportional change in traffic with red representing an increase and green a decrease compared with the 2026 future baseline scenario.

6.6.316 In order to capture flow changes of the Proposed Scheme around Euston and further north, three screenlines were defined, one running east-west immediately south of Euston Road, one east-west immediately north of Euston Road and one further north running east-west between Caledonian road and A5 Kilburn High Road; the latter screenline is outside of CFA1 and runs through CFA2 and CFA3. These are shown in Table 6-158 and Table 6-159 for north and south of Euston Road, together with 3 locations on Euston Road for the AM and PM peak hour respectively and in Table 6-160 and Table 6-161 for the Camden screenline for the AM and PM peak.

Figure 6-170: Traffic flow changes (PCU) 2026 future baseline vs HS2 Phase One - AM peak hour (08:00-09:00) CLoHAM

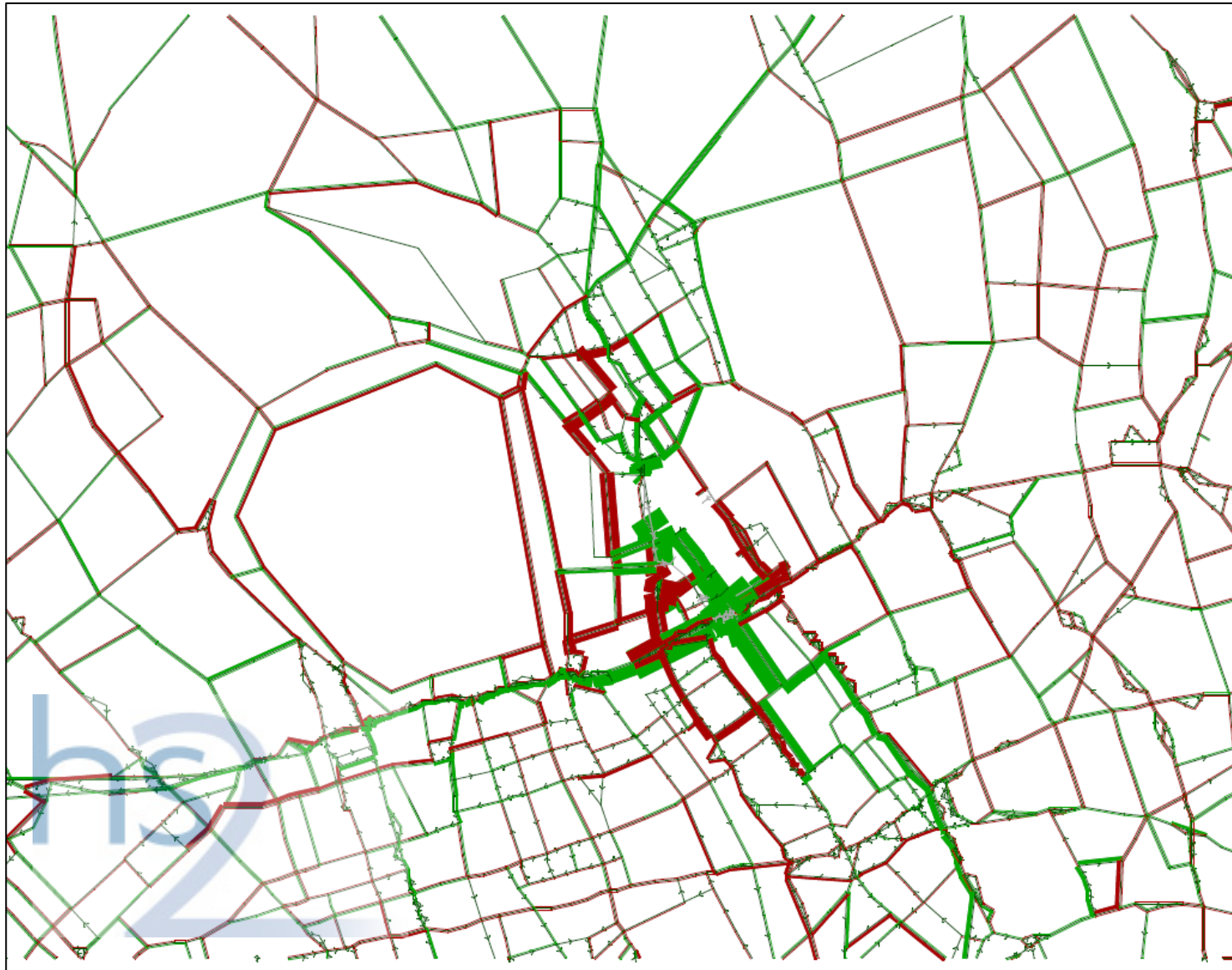


Figure 6-171: Traffic flow changes (PCU) 2026 future baseline vs HS2 Phase One - PM peak hour (17:00-18:00) CLoHAM

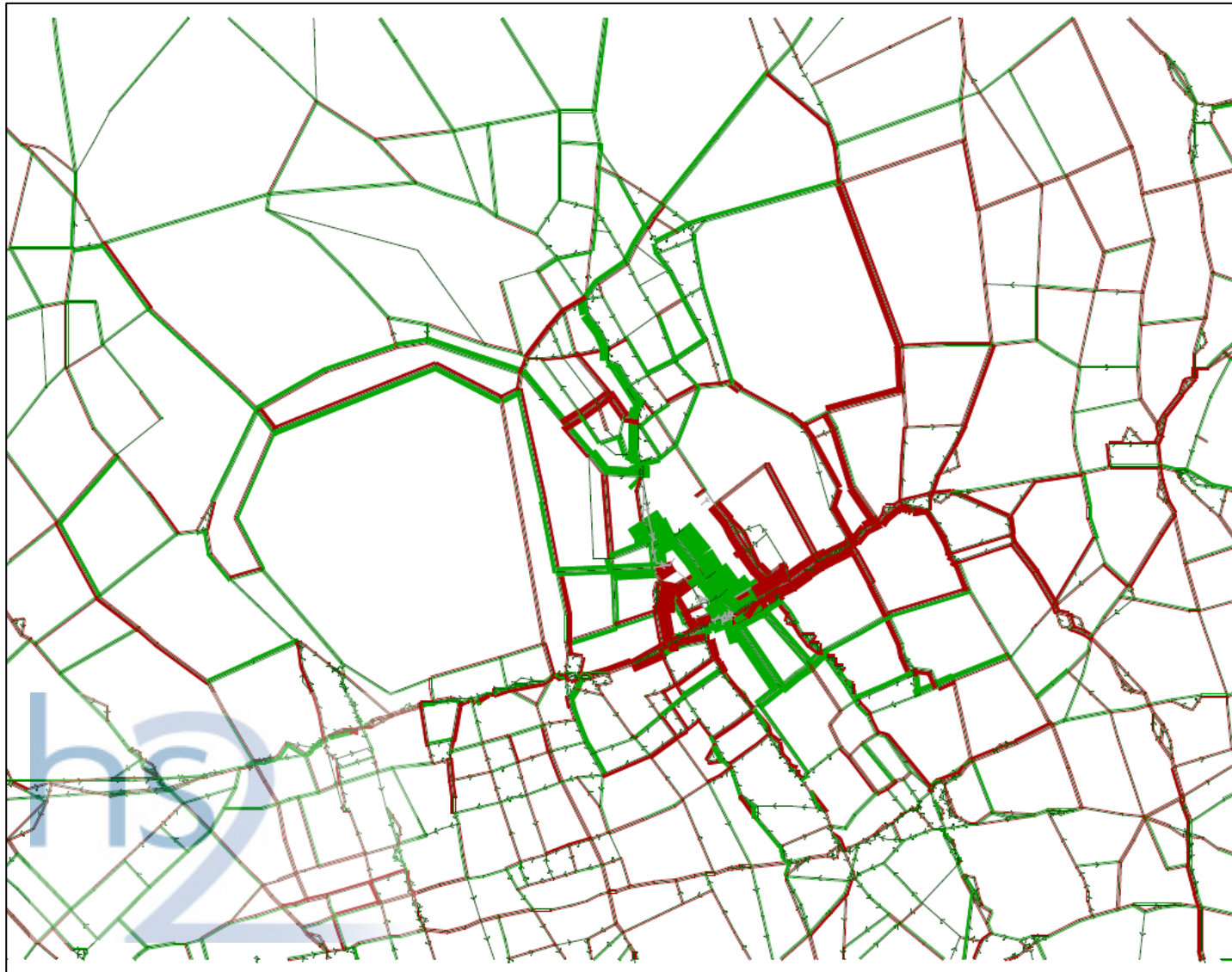


Table 6-158: Baseline and With HS2 Traffic Flows Euston screenlines 2026 AM peak hour (08:00-09:00)

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Outer Circle (between Park Square East and Chester Road)	Northbound	270	0	311	0	41	0	15%	-
	Southbound	202	0	218	0	16	0	8%	-
A4201 Albany Street (between Robert Street and Longford Street)	Northbound	285	26	313	29	28	3	10%	12%
	Southbound	299	17	367	17	67	1	23%	4%
Stanhope Street (between Longford Street and Robert Street)	Northbound	107	4	100	4	-8	0	-7%	-1%
	Southbound	329	7	395	11	65	4	20%	67%
A400 Hampstead Road (between Drummond Street and Robert Street)	Northbound	318	18	525	10	207	-8	65%	-43%
	Southbound	603	52	803	44	200	-8	33%	-15%
Cardington Street (north of Drummond Street)	Northbound	144	4	0	0	-144	-4	-100%	-100%
	Southbound	161	6	0	0	-161	-6	-100%	-100%
New Cobourg Street (north of Starcross Street)	Northbound	-	-	380	1	380	1	-	-
	Southbound	-	-	324	0	324	0	-	-
A4200 Eversholt Street (between Phoenix Road and Polygon Road)	Northbound	262	15	322	15	60	0	23%	3%
	Southbound	260	13	317	12	57	0	22%	-3%
Chalton Street (between Euston Road and Phoenix Road)	Northbound	103	5	130	4	28	0	27%	-9%
	Southbound	85	3	85	2	1	-1	1%	-39%
Midland Road (between Brill Place and Euston Road)	Southbound	623	29	639	31	16	1	3%	4%
A5202 Pancras Road (between Euston Road	Northbound	326	10	357	11	30	1	9%	6%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
and Goods Way)	Southbound	227	10	228	10	1	0	0%	0%
A5203 York Way between Euston Road and Caledonia Street	Northbound	558	30	582	31	25	1	4%	5%
A4201 Portland Place (between Devonshire Street and Park Crescent)	Northbound	296	5	312	4	17	-1	6%	-14%
	Southbound	436	13	465	13	29	0	7%	-1%
B506 Great Portland Street (between Park Crescent Mews East and Devonshire Street)	Southbound	232	12	196	12	-36	0	-15%	-3%
Cleveland Street (between Greenwell Street and Clipstone Street)	Southbound	256	8	248	7	-7	0	-3%	-4%
A400 Tottenham Court Road (between Grafton Way and Warren Street)	Southbound	792	54	898	59	106	5	13%	9%
A400 Gower Street (between Grafton Way and Gower Place)	Southbound	624	24	702	25	79	1	13%	3%
Gordon Street (between Endsleigh Gardens and Euston Road)	Northbound	337	21	0	0	-337	-21	-100%	-100%
	Southbound	262	5	0	0	-262	-5	-100%	-100%
A4200 Upper Woburn Place (between Endsleigh Gardens and Euston Road)	Northbound	421	43	435	37	14	-6	3%	-14%
	Southbound	680	25	746	23	66	-2	10%	-8%
B504 Judd Street (between Bidborough Street and Euston Road)	Northbound	191	15	221	16	30	0	16%	2%
	Southbound	449	24	437	26	-12	2	-3%	7%
A501 Gray's Inn Road (east of Birkenhead Street)	Northbound	1,816	86	1,857	88	41	3	2%	3%
A501 Euston Road between Euston Circus	Eastbound	1,795	101	1,601	86	-194	-15	-11%	-15%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
and Melton Street	Westbound	1,898	109	1,586	98	-311	-11	-16%	-10%
A501 Euston Road between Melton Street and A4200 Upper Woburn Place	Eastbound	1,661	85	1,700	86	39	1	2%	2%
	Westbound	1,566	102	1,603	98	37	-4	2%	-4%
A501 Euston Road between A4200 Upper Woburn Place and Churchway	Eastbound	1,348	76	1,430	78	82	2	6%	3%
	Westbound	1,590	78	1,624	79	34	2	2%	2%

Table 6-159: Baseline and With HS2 Traffic Flows Euston screenlines 2026 PM peak hour (17:00-18:00)

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Outer Circle (between Park Square East and Chester Road)	Northbound	644	0	645	0	1	0	0%	-
	Southbound	209	0	223	0	14	0	7%	-
A4201 Albany Street (between Robert Street and Longford Street)	Northbound	338	3	323	4	-16	1	-5%	40%
	Southbound	314	1	390	2	76	1	24%	116%
Stanhope Street (between Longford Street and Robert Street)	Northbound	72	0	52	1	-20	0	-28%	89%
	Southbound	185	2	155	2	-30	0	-16%	11%
A400 Hampstead Road (between Drummond Street and Robert Street)	Northbound	636	6	649	3	13	-3	2%	-43%
	Southbound	352	1	684	2	333	0	95%	21%
Cardington Street (north of Drummond Street)	Northbound	166	1	0	0	-166	-1	-100%	-100%
	Southbound	382	5	0	0	-382	-5	-100%	-100%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
New Cobourg Street (north of Starcross Street)	Northbound	-	-	406	0	406	0	-	-
	Southbound	-	-	318	0	318	0	-	-
A4200 Eversholt Street (between Phoenix Road and Polygon Road)	Northbound	289	2	403	2	114	0	39%	-3%
	Southbound	223	1	294	1	70	0	31%	9%
Chalton Street (between Euston Road and Phoenix Road)	Northbound	95	2	129	1	34	0	35%	-20%
	Southbound	54	1	81	0	28	0	51%	-56%
Midland Road (between Brill Place and Euston Road)	Southbound	813	12	933	12	119	0	15%	-2%
A5202 Pancras Road (between Euston Road and Goods Way)	Northbound	627	4	753	5	126	0	20%	7%
	Southbound	171	2	175	2	4	0	2%	3%
A5203 York Way between Euston Road and Caledonia Street	Northbound	637	14	665	14	28	0	4%	-1%
A4201 Portland Place (between Devonshire Street and Park Crescent)	Northbound	249	0	253	0	4	0	2%	-7%
	Southbound	532	12	533	11	1	-1	0%	-8%
B506 Great Portland Street (between Park Crescent Mews East and Devonshire Street)	Southbound	270	1	204	1	-66	0	-24%	25%
Cleveland Street (between Greenwell Street and Clipstone Street)	Southbound	259	2	262	1	3	0	1%	-6%
A400 Tottenham Court Road (between Grafton Way and Warren Street)	Southbound	918	10	942	8	24	-2	3%	-24%
A400 Gower Street (between Grafton Way and Gower Place)	Southbound	357	5	510	6	153	1	43%	16%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Gordon Street (between Endsleigh Gardens and Euston Road)	Northbound	452	4	0	0	-452	-4	-100%	-100%
	Southbound	265	2	0	0	-265	-2	-100%	-100%
A4200 Upper Woburn Place (between Endsleigh Gardens and Euston Road)	Northbound	404	3	582	3	178	0	44%	0%
	Southbound	668	7	699	5	32	-2	5%	-22%
B504 Judd Street (between Bidborough Street and Euston Road)	Northbound	114	1	182	2	68	1	60%	95%
	Southbound	313	4	346	4	33	0	11%	-3%
A501 Gray's Inn Road (east of Birkenhead Street)	Northbound	1,734	25	1,868	26	134	0	8%	2%
A501 Euston Road between Euston Circus and Melton Street	Eastbound	1,297	8	1,384	8	86	-1	7%	-8%
	Westbound	1,652	17	1,560	17	-93	0	-6%	1%
A501 Euston Road between Melton Street and A4200 Upper Woburn Place	Eastbound	1,544	8	1,649	8	105	0	7%	-2%
	Westbound	1,271	14	1,578	17	307	2	24%	17%
A501 Euston Road between A4200 Upper Woburn Place and Churchway	Eastbound	1,235	6	1,410	6	175	0	14%	0%
	Westbound	1,352	16	1,542	18	191	2	14%	12%

Table 6-160: Baseline and With HS2 Traffic Flows North Camden screenline 2026 AM peak hour (08:00-09:00)

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A5203 Caledonian Road (south of Wheelwright Road)	Northbound	349	11	354	12	5	0	1%	4%
	Southbound	771	45	764	45	-8	0	-1%	1%
A5200 York Way (north of Vale Road)	Northbound	303	40	321	41	18	1	6%	2%
	Southbound	609	39	611	38	2	0	0%	0%
A5202 St Pancras Way (north of Baynes Street)	Southbound	700	35	662	27	-38	-8	-5%	-23%
Randolph Street (East of Royal College Street)	Eastbound	120	2	117	2	-3	0	-2%	-9%
Royal College Street (south of Camden Rd)	Northbound	344	27	329	27	-15	0	-4%	-1%
A503 Camden Road (south of Royal College St)	Northbound	617	32	588	31	-29	-2	-5%	-5%
	Southbound	934	55	924	62	-10	7	-1%	12%
A400 Camden Street (south of Camden Gardens)	Southbound	1252	64	1228	62	-23	-2	-2%	-3%
A400 Kentish Town Road (south of Camden Gardens)	Northbound	342	20	321	18	-21	-1	-6%	-7%
	Southbound	242	28	229	27	-13	-1	-5%	-3%
Hawley Road	Northbound	1,026	58	1,016	57	-10	-1	-1%	-1%
A502 Chalk Farm Road (west of Hawley Street)	Northbound	88	10	88	10	0	0	0%	3%
	Southbound	853	45	844	44	-9	0	-1%	-1%
Primrose Hill Road (south of Adelaide Road)	Northbound	333	12	311	9	-23	-3	-7%	-24%
	Southbound	630	31	633	33	2	1	0%	4%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Avenue Road (south of B509 Adelaide Road)	Northbound	273	10	284	13	11	2	4%	21%
	Southbound	922	22	924	21	2	-1	0%	-6%
A41 Finchley Road (south of B503 Adelaide Road)	Northbound	651	54	655	54	4	0	1%	-1%
	Southbound	841	66	872	66	31	0	4%	1%
Loudoun Road (south of Alexandra Place)	Northbound	548	8	542	9	-5	1	-1%	10%
	Southbound	349	12	347	12	-2	0	-1%	2%
A507 Abbey Road (south of B509 Belsize Road)	Northbound	315	8	321	8	6	0	2%	-1%
	Southbound	566	15	562	15	-4	0	-1%	0%
A5 Kilburn High Road (south of B509 Belsize Road)	Northbound	573	28	574	28	2	0	0%	0%
	Southbound	272	33	271	33	0	0	0%	0%

Table 6-161: Baseline and With HS2 Traffic Flows North Camden screenline 2026 PM peak hour (17:00-18:00)

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A5203 Caledonian Road (south of Wheelwright Road)	Northbound	484	5	505	5	21	0	4%	4%
	Southbound	526	5	543	5	17	0	3%	3%
A5200 York Way (north of Vale Road)	Northbound	485	17	571	17	86	0	18%	0%
	Southbound	397	10	419	10	22	0	5%	-1%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A5202 St Pancras Way (north of Baynes Street)	Southbound	583	8	553	7	-30	-1	-5%	-10%
Randolph Street (East of Royal College Street)	Eastbound	256	1	202	1	-54	0	-21%	-33%
Royal College Street (south of Camden Rd)	Northbound	491	12	492	12	0	0	0%	0%
A503 Camden Road (south of Royal College St)	Northbound	874	16	799	15	-75	0	-9%	-3%
	Southbound	655	16	673	17	18	1	3%	4%
A400 Camden Street (south of Camden Gardens)	Southbound	739	11	720	10	-19	-1	-3%	-6%
A400 Kentish Town Road (south of Camden Gardens)	Northbound	471	12	473	12	2	-1	1%	-4%
	Southbound	244	1	217	1	-28	0	-11%	0%
Hawley Road	Northbound	1069	17	1063	17	-6	0	-1%	0%
A502 Chalk Farm Road (west of Hawley Street)	Northbound	229	11	230	11	1	0	0%	0%
	Southbound	719	14	716	14	-3	0	0%	0%
Primrose Hill Road (south of Adelaide Road)	Northbound	412	6	406	6	-6	0	-1%	-2%
	Southbound	392	6	378	6	-14	0	-4%	1%
Avenue Road (south of B509 Adelaide Road)	Northbound	515	5	491	5	-23	0	-5%	-1%
	Southbound	621	5	649	5	28	0	5%	-3%
A41 Finchley Road (south of B503 Adelaide Road)	Northbound	787	43	802	43	15	0	2%	0%
	Southbound	557	33	552	33	-5	0	-1%	1%
Loudoun Road (south of Alexandra Place)	Northbound	426	6	420	6	-6	0	-1%	8%

Location	Direction	2026 baseline flows		2026 with HS2 flows		With HS2 actual change from 2026 baseline		With HS2 % change from 2026 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
	Southbound	445	7	433	6	-12	0	-3%	-3%
A507 Abbey Road (south of B509 Belsize Road)	Northbound	527	8	537	8	10	0	2%	-4%
	Southbound	358	4	353	4	-5	0	-2%	-2%
A5 Kilburn High Road (south of B509 Belsize Road)	Northbound	567	15	564	15	-2	0	0%	-1%
	Southbound	471	8	471	8	0	0	0%	0%

- 6.6.317 Traffic flow changes as a result of the Proposed Scheme at Euston are relatively local in nature, being largely contained within an area bounded by A4201 Albany Street, A4201 Parkway, A5202 St. Pancras Way and A5203 York Way, to the north of A501 Euston Road, and, A400 Tottenham Court Road, Torrington Place and A4201 Upper Woburn Place to the south of A501 Euston Road. Much of the changes to the south of A501 Euston Road are an effect of cars and taxis re-routeing as a result of the closure of Gordon Street, due to the provision of the new LU station entrance and the A501 Euston Road sub-surface crossing, and the relocation of the station taxi facility to Cobourg Street.
- 6.6.318 The most noticeable impacts are due to the closure of the northern section of Gordon Street, between Endsleigh Gardens and A501 Euston Road, and Cardington Street, from which all traffic is removed due to the closure of Gordon Street and Cardington Street. The closure of Gordon Street also leads to flow reductions on Gordon Square, A4201 Woburn Place and Malet Street (southbound). There are corresponding increases on other north-south routes to the south of A501 Euston Road, in particular on A501 Gray's Inn Road, A400 Gower Street (southbound) and A400 Tottenham Court Road (northbound). To the north of A501 Euston Road, there are two way flow increases on A501 Euston Road, A400 Hampstead Road, Stanhope Street, A4201 Albany Road and Outer Circle.
- 6.6.319 A501 Euston Road shows a reduction in traffic between A400 Hampstead Road and Gordon Street, due to the redistribution of traffic previously routeing on A501 Euston Road to access/exit from Gordon Street and Cobourg Street and also a lane reduction on A501 Euston Road in the westbound direction, at the new Euston bus station access, to allow buses to turn right.
- 6.6.320 Taking the flows on the screenline to the north of A501 Euston Road, most roads, with the exception of A400 Hampstead Road, experience only a small change in flows. Total flow across the screenline increases by between approximately 140 during the PM peak hour in the northbound direction, with a future baseline total of approximately 3,730 PCU per hour, and, 280 PCU per hour during the AM peak hour in the northbound direction (with a future baseline total of approximately 2,650 PCU per hour).
- 6.6.321 On the screenline to the south of A501 Euston Road, the closure of Gordon Street leads to a small net decrease in total across the screenline of between approximately 20 PCU per hour in the northbound direction during the PM peak hour (with a future baseline total of approximately 4,190 PCU per hour), and approximately 140 PCU per hour in the southbound direction in the AM peak hour (with a future baseline total of 3,198 PCU per hour). Those roads immediately adjacent to Gordon Street, i.e. A400 Gower Street southbound and A4201 Upper Woburn Place northbound, experience the largest flow increases.

- 6.6.322 There is a negligible change between the 2026 future baseline and the Proposed Scheme across the Camden screenline with a -1% difference in both all vehicles and HGV's in both directions across the AM and PM peaks. On individual roads, all vehicles increase by a slightly higher percentage but do not exceed +7% or -8% on any road. The percentage increase in HGV's is greater but the absolute numbers are much lower than for all vehicles. The low level of flow changes reflects the fact that the impacts of the Proposed Scheme at Euston station decrease rapidly with increasing distance from the local area.
- 6.6.323 A number of links were triggered in the ES analysis for 2026 where the traffic increased between the future baseline and Proposed Scheme by more than 10%. These roads are set out in Table 6-162 and Table 6-163 for the AM and PM peak hours respectively. The majority of roads affected are relatively local to Euston station and within CFA1 and are the result of permanent changes to the highway network and increased taxis associated with increased rail demand. The most notable increases are on:
- AM peak hour:
 - A501 Euston Road slip road at North Gower Street westbound (+210 vehicles/hour);
 - A400 Hampstead Road in both directions (+200 vehicles/hour); and
 - Mornington Street westbound (+180 vehicles/hour).
 - PM peak hour:
 - A501 Euston road westbound (+325 vehicles hour);
 - A400 Gower Street northbound (+150 vehicles/hour); and
 - A400 Hampstead Road southbound +330 vehicles/hour).
- 6.6.324 There are very limited impacts outside CFA1, with flow increases on
- Arlington Road (CFA1 and 2 AM and PM)
 - Parkway (CFA1 and 2 AM only);
 - Sussex Gardens (CFA4 AM only);
 - B525 Avenue Road (CFA1 and 3 PM only); and
 - Caledonian Road (CFA2 PM only).
- 6.6.325 There are negligible changes to HGV flows associated with the proposed scheme in 2026 with a maximum increase of 10 vehicles in the AM peak hour and virtually no change on any road for the PM peak hour.

Table 6-162 Triggered links. 2026 AM peak

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A4201 Albany Street (between Euston Road and Longford Street)	CFA1	Northbound	202	23	262	23	60	0	30%	-1%
	CFA1	Southbound	210	12	319	18	109	6	52%	45%
Arlington Road (between Delancey Street and Mornington Street)	CFA1 & 2	Northbound	13	0	25	0	12	0	95%	61%
	CFA1 & 2	Southbound	92	2	223	9	131	8	142%	513%
Churchway/Grafton Place (north of Euston Road)	CFA1	Northbound	18	0	100	0	82	0	454%	-
	CFA1	Southbound	100	1	110	0	10	-1	10%	-57%
B512 Crowndale Road (west of Oakley Square)	CFA1	Westbound	109	5	152	5	43	1	39%	12%
	CFA1	Eastbound	148	6	175	7	27	1	18%	20%
Crawford Street (west of Gloucester Place)	CFA1	Westbound	185	10	185	13	0	3	0%	24%
	CFA1	Eastbound	230	4	292	4	61	-1	27%	-14%
A503 Delancey Street (between Albert Street and Arlington Road)	CFA1	Westbound	763	30	911	40	148	10	19%	34%
Drummond Street (west of Hampstead Road)	CFA1	Westbound	194	12	199	14	4	2	2%	16%
	CFA1	Eastbound	16	2	88	0	71	-2	434%	-88%
Endsleigh Gardens (west of Tavistock Square)	CFA1	Westbound	352	10	417	11	65	1	18%	10%
A501 Euston Road slip road at North Gower Street	CFA1	Westbound	468	30	677	25	209	-4	45%	-15%
	CFA1	Eastbound	654	72	758	69	104	-3	16%	-5%
A4200 Eversholt Street/Euston Square (between	CFA1	Northbound	262	15	347	15	84	0	32%	3%

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Doric Way and Grafton Place)	CFA1	Southbound	265	14	339	12	74	-1	28%	-10%
A400 Gower Street (between Torrington Place and Chenies Street)	CFA1	Southbound	285	18	376	17	91	-1	32%	-5%
A400 Hampstead Road (between Robert Street and Drummond Street)	CFA1	Northbound	318	18	525	10	207	-8	65%	-43%
	CFA1	Southbound	603	52	803	44	200	-8	33%	-15%
Longford Street (east of Albany Street)	CFA1	Westbound	114	4	184	11	70	7	62%	205%
	CFA1	Eastbound	81	4	137	4	56	0	70%	-6%
Mornington Crescent (between Arlington Road and Eversholt Street)	CFA1	Westbound	26	0	86	1	60	1	234%	279%
	CFA1	Eastbound	178	5	192	9	14	4	8%	72%
Mornington Street (between Park Village East and Mornington Terrace)	CFA1	Westbound	80	1	258	10	178	9	221%	963%
	CFA1	Eastbound	203	5	253	9	50	4	25%	81%
New Cavendish Street (between Howland Street and Great Portland Street)	CFA1	Westbound	185	40	228	41	44	1	24%	3%
Old Marylebone Road (between Edgware Road and Shouldham Street)	CFA1	Westbound	618	37	621	36	3	-2	1%	-5%
	CFA1	Eastbound	384	11	449	10	65	0	17%	-4%
Osnaburgh Street (between Albany Street and Osnaburgh Street)	CFA1	Eastbound	471	27	533	32	62	5	13%	19%
Park Square East (between Marylebone Road and Outer Circle)	CFA1	Northbound	170	0	217	0	48	0	28%	-
	CFA1	Southbound	423	0	424	0	1	0	0%	-
Park Village East (south of Mornington Street)	CFA1	Northbound	25	0	57	1	32	0	128%	200%

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
	CFA1	Southbound	209	4	312	12	103	8	49%	188%
Parkway (between Prince Albert Road and Albany Street)	CFA1 & 2	Northbound	614	22	639	24	25	2	4%	10%
	CFA1 & 2	Southbound	529	17	611	18	82	1	16%	4%
Pratt Street (between Bayham Street and Camden High Street)	CFA1	Westbound	608	18	706	27	98	9	16%	49%
Stanhope Street (between Robert Street and Everton Buildings)	CFA1	Northbound	153	5	160	6	7	1	5%	14%
	CFA1	Southbound	84	1	204	9	119	8	141%	533%
Sussex Gardens (between Sale Place and Edgware Road)	CFA4	Westbound	737	27	741	27	3	0	0%	-1%
	CFA4	Eastbound	460	12	524	12	64	0	14%	-4%
Torrington Place (between Gower Street and Malet Street)	CFA1	Westbound	210	11	337	20	128	9	61%	76%
	CFA1	Eastbound	356	20	373	19	18	-1	5%	-3%
A400 Tottenham Court Road (intersection with Euston Road)	CFA1	Northbound	636	35	699	33	63	-2	10%	-5%

Table 6-163 Triggered links. 2026 PM peak

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A4201 Albany Street (north of Longford Street)	CFA1	Northbound	338	3	323	4	-16	1	-5%	40%
	CFA1	Southbound	314	1	390	2	76	1	24%	116%
Arlington Road (between Mornington Street and Mornington Crescent)	CFA1 & 2	Northbound	39	0	99	1	61	0	158%	61%
	CFA1 & 2	Southbound	154	3	221	3	67	0	44%	5%
B525 Avenue Road (south of A5205 Prince Albert Road)	CFA1 & 3	Northbound	492	0	470	0	-22	0	-5%	0%
	CFA1 & 3	Southbound	509	0	563	0	53	0	10%	0%
Caledonian Road (between Pentonville Road and Caledonia Street)	CFA2	Southbound	569	13	628	13	59	0	10%	3%
Churchway/(Grafton Place (north of Euston Road)	CFA1	Northbound	18	0	74	0	56	0	310%	-
	CFA1	Southbound	87	0	87	0	0	0	0%	-100%
Drummond Street (between Hampstead Road and North Gower Street)	CFA1	Westbound	76	1	25	0	-51	-1	-67%	-94%
	CFA1	Eastbound	46	0	155	1	109	0	239%	56%
A501 Euston Road (between Upper Woburn Place and Gordon Street)	CFA1	Westbound	1,253	14	1,578	17	325	2	26%	17%
	CFA1	Eastbound	1,526	8	1,649	8	123	0	8%	-1%
A400 Euston Road/Gower Street slip road	CFA1	Westbound	34	0	34	0	0	0	-1%	-
	CFA1	Eastbound	317	3	448	3	131	0	41%	0%
A501 Euston Road slip road at North Gower Street	CFA1	Eastbound	203	2	330	2	128	0	63%	5%
	CFA1	Westbound	160	3	204	4	44	1	28%	16%
Euston Street (between Cobourg Street and North	CFA1	Westbound	1	0	47	0	46	0	8,244%	4,550%

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Gower Street										
A4200 Eversholt Street/Euston Square (between Doric Way and Grafton Place)	CFA1	Northbound	289	2	423	2	134	0	46%	-3%
	CFA1	Southbound	233	3	315	1	82	-1	35%	-45%
Goods Way (between Granary Square and York Way)	CFA1	Westbound	347	8	362	8	15	0	4%	-2%
	CFA1	Eastbound	376	4	474	4	98	0	26%	6%
A400 Gower Street (between Endsleigh Gardens and Grafton Way)	CFA1	Southbound	357	5	510	6	153	1	43%	16%
Grafton Way (between Huntley Street and Tottenham Court Road)	CFA1	Westbound	208	3	270	3	62	0	30%	10%
A5200 Gray's Inn Road (between Acton Street and Swinton Street)	CFA1	Northbound	978	17	1085	18	107	1	11%	5%
B502 Guilford Street (west of Guilford Place)	CFA1	Westbound	451	11	504	11	53	0	12%	2%
	CFA1	Eastbound	648	8	546	8	-101	-1	-16%	-11%
A400 Hampstead Road (between Robert Street and Drummond Street)	CFA1	Northbound	636	6	649	3	13	-3	2%	-43%
	CFA1	Southbound	352	1	684	2	333	0	95%	21%
Howland Street (between Fitzroy Street and Cleveland Street)	CFA1	Westbound	548	8	613	8	65	0	12%	-4%
B504 Judd Street (between Bidborough Street and Euston Road)	CFA1	Northbound	114	1	182	2	68	1	60%	95%
	CFA1	Southbound	313	4	346	4	33	0	11%	-3%
B503 King's Cross Road (north of Pentonville Road)	CFA1	Southbound	511	8	566	8	55	0	11%	-1%
Midland Road (between Euston Road and Brill	CFA1	Southbound	813	12	933	12	119	0	15%	-2%

Location	CFA	Direction	2026 baseline flow		2026 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Place)										
Mornington Crescent (between Arlington Road and Eversholt Street)	CFA1	Westbound	73	0	146	1	73	0	101%	184%
	CFA1	Eastbound	178	3	246	3	69	0	39%	5%
Mornington Street (between Park Village East and Mornington Terrace)	CFA1	Westbound	56	0	144	2	88	1	156%	406%
	CFA1	Eastbound	192	3	294	4	102	1	53%	19%
New Cavendish Street (between Howland Street and Great Portland Street)	CFA1	Westbound	346	9	386	9	40	0	12%	0%
North Gower Street (south of Stephenson Way)	CFA1	Northbound	69	1	61	1	-8	-1	-11%	-41%
	CFA1	Southbound	13	0	143	1	130	0	994%	128%
A5202 Pancras Road (north of Euston Road/parallel to St Pancras International)	CFA1	Northbound	627	4	753	5	126	0	20%	7%
	CFA1	Southbound	171	2	175	2	4	0	2%	3%
Torrington Place (between Gower Street and Huntley Street)	CFA1	Westbound	131	2	189	2	58	0	44%	27%
A400 Tottenham Court Road (between Warren Street and Euston Road)	CFA1	Northbound	457	5	734	5	278	0	61%	10%
A4200 Upper Woburn Place (between Euston Road and Endsleigh Gardens)	CFA1	Northbound	404	3	582	3	178	0	44%	0%
	CFA1	Southbound	668	7	699	5	32	-2	5%	-22%
York Way (between Goods Way and Copenhagen Street)	CFA2	Northbound	705	15	815	15	110	0	16%	2%
	CFA2	Southbound	584	15	602	15	18	0	3%	1%

*Highway network analysis 2041***Strategic highway assessment model analysis**

- 6.6.326 Junction capacity analysis has been undertaken comparing junction operation in the 2041 future baseline scenario with the 2041 HS2 Phase One and Phase Two scenario. As for 2026, the assessment of junctions is based on the relationship of flow to capacity, measured as the Volume Capacity (VoC) ratio.
- 6.6.327 The results of the 2041 assessment indicate that 16 junctions are impacted by the Proposed Scheme. These are shown in Table 6-164.

Table 6-164: 2041 AM and PM peak hour impacted junctions

Junction name	Control type
A40 New Oxford Street/A400 Tottenham Court Road	Signal
A400 Gower Street/Torrington Place	Signal
A400 Tottenham Court Road/Torrington Place	Signal
A501 Euston Road (eastbound)/A400 Hampstead Road	Signal
A501 Euston Road (westbound)/A400 Hampstead Road	Signal
A501 Euston Road/A400 Gower Street	Signal
A501 Euston Road/A4200 Eversholt Street	Signal
A501 Euston Road/A5200 York Way	Priority
A501 Euston Road/B504 Judd Street	Signal
A501 Euston Road/Euston bus station access	Signal
A501 Euston Road/Ossulston Street	Signal
A5200 Gray's Inn Road/A201 Swinton Street	Signal
A5200 York Way/Market Road	Signal
A5205 St John's Wood Road/B507 Lisson Grove	Signal
B506 Great Portland Street/New Cavendish Street	Signal
Tavistock Square/Bedford Way	Signal

- 6.6.328 The number of junctions triggered is greater than for 2026 for two reasons:
- the level of general traffic growth (including taxis) between 2026 and 2041, means that the road network is more congested and the future baseline VoC is generally higher in 2041; and
 - if more junctions are above 85% in the future baseline, small increases in traffic flow will lead to a larger number of junctions being impacted by the Proposed Scheme.

- 6.6.329 In addition, the level of taxi demand generated is based on 2% of shorter distance rail passengers and 6% of long distance NR and HS2 passengers completing their onward journey by taxi. The total number of NR passengers alighting at Euston during the AM peak three hour with HS2 increases from 36,300 in 2026 to 56,400 in 2041, an increase of some 20,100 (55%). This comprises 16,060 long distance/HS2 and 4,040 suburban rail passengers. The number of taxis forecast to serve Euston station is therefore higher in 2041, which contributes to the increase in impacted junctions.
- 6.6.330 The impacted junctions that were signalised were locally optimised in SATURN to represent how the junction operation could improve with revised green times but with the same overall cycle time. This indicated that the VoC would reduce below the 87% threshold in the 'with HS2' scenario at some junctions. Further analysis of the junctions close to Euston station has been undertaken as part of the local highway assessment.

Strategic and local road network flows 2041

- 6.6.331 The traffic flow impacts of the Proposed Scheme were assessed by comparing the change in traffic flow between the 2041 future baseline and HS2 Phase Two scenarios. The flow differences for the AM and PM peak hours are shown in Figure 6-172 and Figure 6-173 respectively. As for 2026, the width of the band indicates the proportional change in traffic with red representing an increase and green a decrease compared with the 2041 future baseline scenario.
- 6.6.332 In order to capture flow changes of the Proposed Scheme around Euston and further north, three screenlines were defined, one running east-west immediately south of Euston Road, one east-west immediately north of Euston Road and one further north running east-west between Caledonian road and A5 Kilburn High Road; the latter screenline is outside of CFA1 and runs through CFA2 and CFA3. These are shown in Table 6-165 and Table 6-166 for north and south of Euston Road, together with 3 locations on Euston Road for the AM and PM peak hour respectively and in Table 6-167 and Table 6-168 for the Camden screenline for the AM and PM peak hours.

Figure 6-172: Traffic flow changes (PCU) 2041 future baseline vs HS2 Phase One and Phase Two - AM peak hour (08:00-09:00) CLoHAM

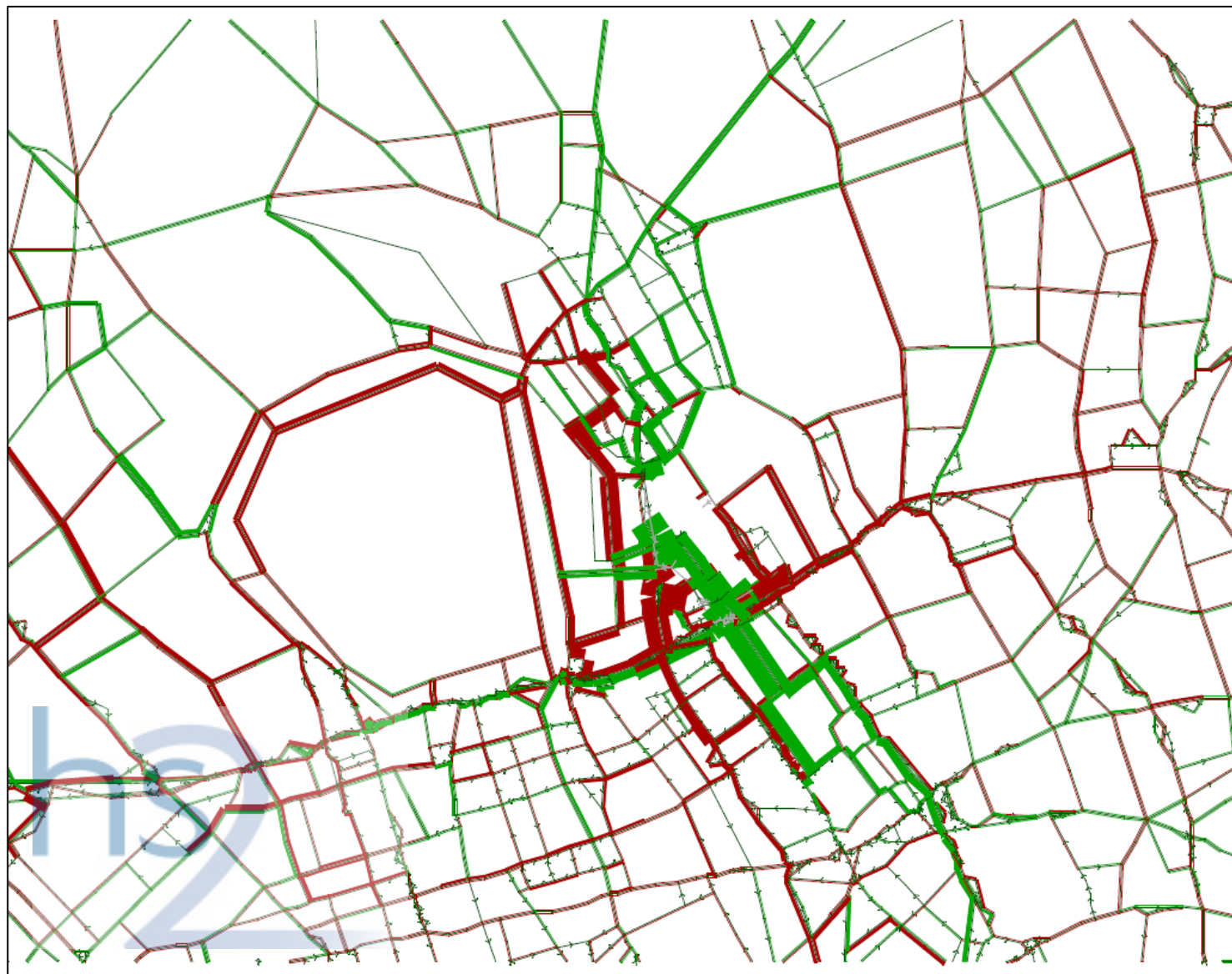


Figure 6-173: Traffic flow changes (PCU) 2041 future baseline vs HS2 Phase One and Phase Two - PM peak hour (17:00-18:00) CLoHAM

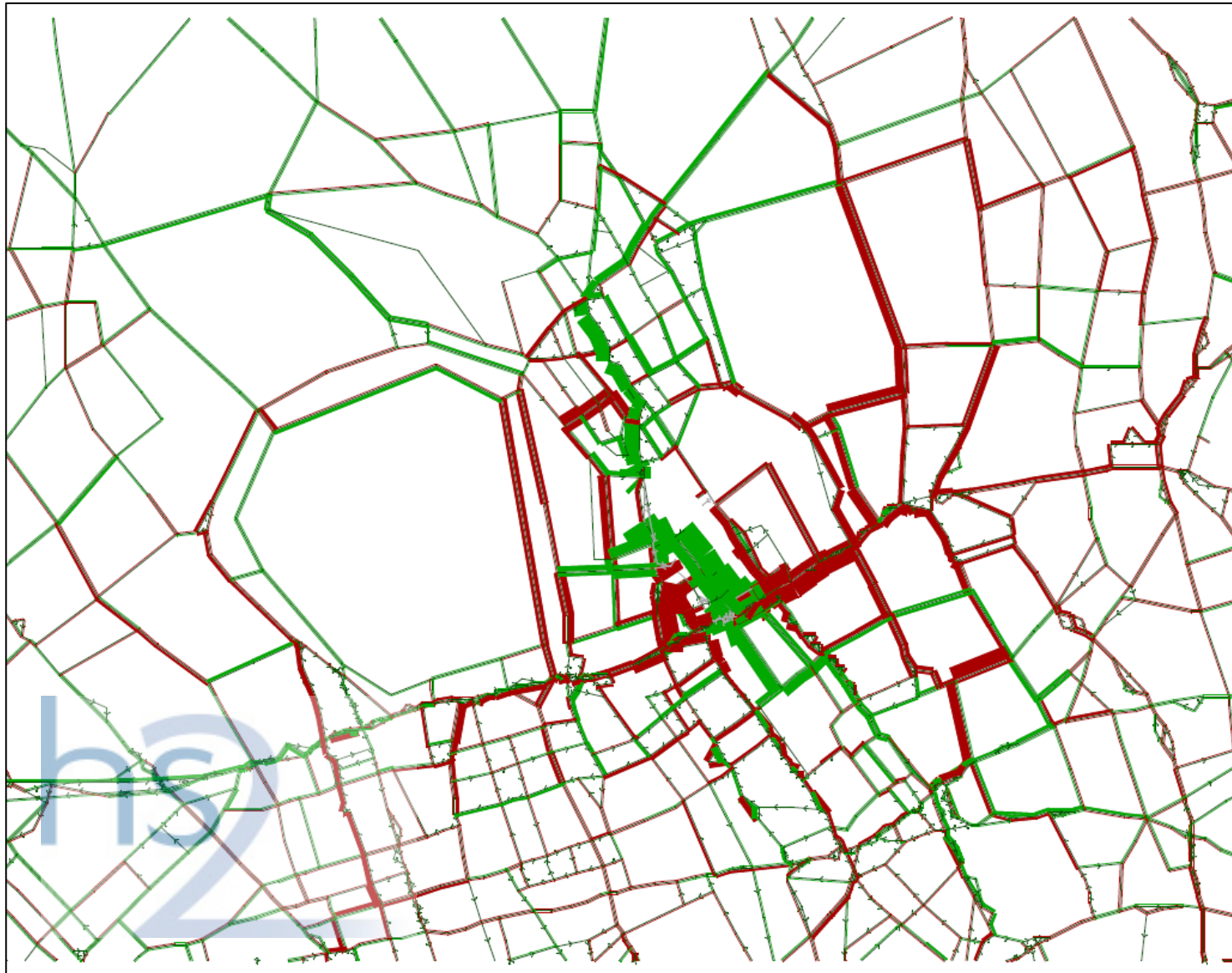


Table 6-165: Baseline and With HS2 Traffic Flows Euston screenlines 2041 AM peak hour (08:00-09:00)

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Outer Circle (between Park Square East and Chester Road)	Northbound	283	0	323	0	40	0	14%	-
	Southbound	207	0	217	0	10	0	5%	-
A4201 Albany Street (between Robert Street and Longford Street)	Northbound	298	28	312	29	14	1	5%	4%
	Southbound	283	17	378	19	96	1	34%	8%
Stanhope Street (between Longford Street and Robert Street)	Northbound	118	5	116	5	-2	0	-2%	-5%
	Southbound	392	8	502	14	110	7	28%	83%
A400 Hampstead Road (between Drummond Street and Robert Street)	Northbound	338	17	620	11	282	-6	83%	-36%
	Southbound	633	52	917	36	284	-17	45%	-32%
Cardington Street (north of Drummond Street)	Northbound	192	4	0	0	-192	-4	-100%	-100%
	Southbound	172	7	0	0	-172	-7	-100%	-100%
New Cobourg Street (north of Starcross Street)	Northbound	-	-	630	0	630	0	-	-
	Southbound	-	-	567	0	567	0	-	-
A4200 Eversholt Street (between Phoenix Road and Polygon Road)	Northbound	309	17	366	15	58	-2	19%	-10%
	Southbound	277	13	314	12	37	-1	13%	-8%
Chalton Street (between Euston Road and Phoenix Road)	Northbound	91	4	148	4	58	0	63%	5%
	Southbound	109	3	138	2	29	-1	26%	-36%
Midland Road (between Brill Place and Euston Road)	Southbound	650	32	677	34	26	1	4%	4%
A5202 Pancras Road (between Euston Road and Goods Way)	Northbound	349	12	373	14	24	3	7%	24%
	Southbound	224	10	230	10	6	0	3%	-1%
A5203 York Way between Euston Road and Caledonia Street	Northbound	545	29	594	29	48	0	9%	-1%
A4201 Portland Place (between Devonshire Street and Park Crescent)	Northbound	298	5	320	4	22	-2	7%	-28%
	Southbound	471	15	437	14	-33	-1	-7%	-9%
B506 Great Portland Street (between Park Crescent Mews East and Devonshire Street)	Southbound	246	13	247	14	0	1	0%	11%
Cleveland Street (between Greenwell Street and Clipstone Street)	Southbound	257	8	268	7	11	-1	4%	-13%

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A400 Tottenham Court Road (between Grafton Way and Warren Street)	Southbound	801	57	949	58	148	2	18%	3%
A400 Gower Street (between Grafton Way and Gower Place)	Southbound	650	29	720	24	70	-5	11%	-17%
Gordon Street (between Endsleigh Gardens and Euston Road)	Northbound	384	29	0	0	-384	-29	-100%	-100%
	Southbound	275	6	0	0	-275	-6	-100%	-100%
A4200 Upper Woburn Place (between Endsleigh Gardens and Euston Road)	Northbound	430	34	436	38	6	4	1%	11%
	Southbound	702	24	717	24	16	1	2%	4%
B504 Judd Street (between Bidborough Street and Euston Road)	Northbound	200	15	242	14	42	-1	21%	-7%
	Southbound	474	26	465	27	-9	1	-2%	3%
A501 Gray's Inn Road (east of Birkenhead Street)	Northbound	1853	82	1920	86	67	3	4%	4%
A501 Euston Road between Euston Circus and Melton Street	Eastbound	1573	84	1594	88	21	4	1%	5%
	Westbound	1889	101	1646	94	-243	-7	-13%	-7%
A501 Euston Road between Melton Street and A4200 Upper Woburn Place	Eastbound	1538	80	1711	88	173	8	11%	10%
	Westbound	1510	86	1662	94	151	8	10%	9%
A501 Euston Road between A4200 Upper Woburn Place and Churchway	Eastbound	1243	73	1443	78	200	4	16%	6%
	Westbound	1596	73	1679	74	84	1	5%	1%

Table 6-166: Baseline and With HS2 Traffic Flows Euston screenlines 2041 PM peak hour (17:00-18:00)

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Outer Circle (between Park Square East and Chester Road)	Northbound	752	0	787	0	35	0	5%	-
	Southbound	211	0	266	0	55	0	26%	-
A4201 Albany Street (between Robert Street and Longford Street)	Northbound	259	3	305	4	46	1	18%	32%
	Southbound	330	1	436	3	106	1	32%	88%

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Stanhope Street (between Longford Street and Robert Street)	Northbound	182	1	152	1	-30	0	-17%	12%
	Southbound	184	2	217	2	33	0	18%	15%
A400 Hampstead Road (between Drummond Street and Robert Street)	Northbound	633	6	697	3	64	-2	10%	-44%
	Southbound	341	2	827	1	486	0	142%	-17%
Cardington Street (north of Drummond Street)	Northbound	188	1	0	0	-188	-1	-100%	-100%
	Southbound	413	5	0	0	-413	-5	-100%	-100%
New Cobourg Street (north of Starcross Street)	Northbound	-	-	664	0	664	0	-	-
	Southbound	-	-	570	0	570	0	-	-
A4200 Eversholt Street (between Phoenix Road and Polygon Road)	Northbound	329	4	442	2	112	-2	34%	-46%
	Southbound	337	2	321	1	-16	0	-5%	-25%
Chalton Street (between Euston Road and Phoenix Road)	Northbound	111	2	135	1	23	-1	21%	-35%
	Southbound	57	1	96	1	39	0	69%	-34%
Midland Road (between Brill Place and Euston Road)	Southbound	833	13	969	13	136	0	16%	1%
A5202 Pancras Road (between Euston Road and Goods Way)	Northbound	644	5	819	6	175	0	27%	8%
	Southbound	165	2	176	2	11	0	6%	3%
A5203 York Way between Euston Road and Caledonia Street	Northbound	632	13	698	13	66	0	10%	-1%
A4201 Portland Place (between Devonshire Street and Park Crescent)	Northbound	276	0	292	0	16	0	6%	-9%
	Southbound	513	12	518	12	5	0	1%	-3%
B506 Great Portland Street (between Park Crescent Mews East and Devonshire Street)	Southbound	304	1	250	1	-54	0	-18%	13%
Cleveland Street (between Greenwell Street and Clipstone Street)	Southbound	267	2	291	1	23	0	9%	-9%
A400 Tottenham Court Road (between Grafton Way and Warren Street)	Southbound	917	10	943	7	26	-3	3%	-31%
A400 Gower Street (between Grafton Way and Gower Place)	Southbound	359	6	557	7	198	1	55%	8%

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
Gordon Street (between Endsleigh Gardens and Euston Road)	Northbound	512	3	0	0	-512	-3	-100%	-100%
	Southbound	267	2	0	0	-267	-2	-100%	-100%
A4200 Upper Woburn Place (between Endsleigh Gardens and Euston Road)	Northbound	437	4	626	3	189	-1	43%	-29%
	Southbound	673	7	769	6	96	-1	14%	-20%
B504 Judd Street (between Bidborough Street and Euston Road)	Northbound	125	2	204	3	79	1	63%	69%
	Southbound	338	4	388	4	49	0	15%	-5%
A501 Gray's Inn Road (east of Birkenhead Street)	Northbound	1,748	26	1,944	27	196	1	11%	4%
A501 Euston Road between Euston Circus and Melton Street	Eastbound	1,285	8	1,347	8	61	0	5%	-2%
	Westbound	1,679	17	1,598	18	-81	1	-5%	5%
A501 Euston Road between Melton Street and A4200 Upper Woburn Place	Eastbound	1,547	8	1,679	8	132	0	9%	-3%
	Westbound	1,310	15	1,617	18	308	3	23%	22%
A501 Euston Road between A4200 Upper Woburn Place and Churchway	Eastbound	1,252	6	1,428	6	176	0	14%	-1%
	Westbound	1,304	17	1,597	20	293	3	22%	18%

Table 6-167: Baseline and With HS2 Traffic Flows Northern Camden screenlines 2026 AM peak hour (08:00-09:00)

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A5203 Caledonian Road (south of Wheelwright Road)	Northbound	367	13	386	13	19	0	5%	2%
	Southbound	799	46	781	47	-17	0	-2%	1%
A5200 York Way (north of Vale Road)	Northbound	314	39	342	40	29	2	9%	5%
	Southbound	594	38	606	38	11	1	2%	2%
A5202 St Pancras Way (north of Baynes Street)	Southbound	768	38	714	32	-55	-7	-7%	-18%
Randolph Street (East of Royal College Street)	Eastbound	130	3	107	2	-23	-1	-18%	-31%
Royal College Street (south of Camden Rd)	Northbound	353	27	334	24	-19	-3	-5%	-10%
A503 Camden Road (south)	Northbound	633	33	593	31	-40	-2	-6%	-6%

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
of Royal College St)	Southbound	983	58	983	59	-1	1	0%	1%
A400 Camden Street (south of Camden Gardens)	Southbound	1262	68	1251	60	-12	-7	-1%	-11%
A400 Kentish Town Road (south of Camden Gardens)	Northbound	360	21	330	19	-31	-2	-8%	-11%
	Southbound	253	24	233	28	-20	4	-8%	16%
Hawley Road	Northbound	1036	59	1033	59	-3	0	0%	0%
A502 Chalk Farm Road (west of Hawley Street)	Northbound	89	9	90	9	1	0	1%	0%
	Southbound	862	46	860	45	-2	0	0%	0%
Primrose Hill Road (south of Adelaide Road)	Northbound	341	10	311	9	-31	-1	-9%	-13%
	Southbound	635	33	630	35	-5	2	-1%	7%
Avenue Road (south of B509 Adelaide Road)	Northbound	291	13	292	13	1	0	0%	0%
	Southbound	919	23	935	20	16	-3	2%	-12%
A41 Finchley Road (south of B503 Adelaide Road)	Northbound	661	54	661	56	1	2	0%	3%
	Southbound	931	66	941	69	10	2	1%	4%
Loudoun Road (south of Alexandra Place)	Northbound	546	10	571	9	25	-1	5%	-10%
	Southbound	395	14	395	14	-1	0	0%	-2%
A507 Abbey Road (south of B509 Belsize Road)	Northbound	316	8	323	8	6	0	2%	-4%
	Southbound	535	14	567	14	32	0	6%	-3%
A5 Kilburn High Road (south of B509 Belsize Road)	Northbound	565	27	571	26	6	-1	1%	-5%
	Southbound	278	33	277	32	-1	-1	0%	-3%

Table 6-168: Baseline and with HS2 Traffic Flows northern Camden screenlines 2041 PM peak hour (17:00-18:00)

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A5203 Caledonian Road (south of Wheelwright Road)	Northbound	494	5	522	5	28	0	6%	10%
	Southbound	579	6	623	7	44	0	8%	5%
A5200 York Way (north of Vale Road)	Northbound	503	17	626	18	123	1	24%	3%
	Southbound	409	10	441	10	32	0	8%	2%

Location	Direction	2041 baseline flows		2041 with HS2 flows		With HS2 actual change from 2041 baseline		With HS2 % change from 2041 baseline	
		All vehicles	HGV	All vehicles	HGV	All vehicles	HGV	All vehicles	HGV
A502 St Pancras Way (north of Baynes Street)	Southbound	614	9	575	7	-39	-1	-6%	-14%
Randolph Street (East of Royal College Street)	Eastbound	283	1	240	1	-42	0	-15%	-34%
Royal College Street (south of Camden Rd)	Northbound	499	13	503	13	3	0	1%	0%
A503 Camden Road (south of Royal College St)	Northbound	1017	17	892	16	-126	-1	-12%	-7%
	Southbound	663	16	685	17	22	1	3%	4%
A400 Camden Street (south of Camden Gardens)	Southbound	754	11	738	10	-16	-1	-2%	-8%
A400 Kentish Town Road (south of Camden Gardens)	Northbound	475	12	473	12	-1	-1	0%	-7%
	Southbound	248	1	220	1	-28	0	-11%	0%
Hawley Road	Northbound	1094	17	1103	16	9	-1	1%	-3%
A502 Chalk Farm Road (west of Hawley Street)	Northbound	229	11	227	11	-3	0	-1%	5%
	Southbound	744	14	755	14	11	0	2%	-1%
Primrose Hill Road (south of Adelaide Road)	Northbound	445	6	419	6	-26	0	-6%	-3%
	Southbound	403	6	381	6	-22	0	-6%	1%
Avenue Road (south of B509 Adelaide Road)	Northbound	531	5	523	5	-8	0	-1%	-2%
	Southbound	632	2	631	1	-1	-1	0%	-42%
A41 Finchley Road (south of B503 Adelaide Road)	Northbound	853	43	861	44	8	1	1%	2%
	Southbound	575	36	575	37	0	1	0%	2%
Loudoun Road (south of Alexandra Place)	Northbound	465	5	468	5	4	0	1%	-2%
	Southbound	459	8	461	7	2	0	0%	-1%
A507 Abbey Road (south of B509 Belsize Road)	Northbound	493	8	511	9	18	0	4%	1%
	Southbound	357	4	355	4	-2	0	-1%	0%
A5 Kilburn High Road (south of B509 Belsize Road)	Northbound	583	16	578	15	-6	-1	-1%	-4%
	Southbound	460	8	464	8	3	0	1%	0%

6.6.333 The assumptions in terms of network layout are very similar to the 2026 HS2 Phase One scenario, along with continued background growth in general traffic demand including additional increases in taxi demand to and from Euston station are accounted for in the 2041 forecasts. The underlying growth in background demand is included in the future baseline and 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios.

- 6.6.334 The impacts are more substantial in the PM peak hour. During the PM peak hour, taxi generation is greater as taxi occupancy is reduced when compared to the AM peak hour when taxi share is in operation.
- 6.6.335 Traffic flow changes as a result of the Proposed Scheme are relatively local to the Euston area although cover a slightly larger area than for the 2026 HS2 Phase One scenario, particularly for the PM peak hour. In particular, the area affected north of A501 Euston Road, during the PM peak hour, runs from the Outer Circle (west) to A5203 Caledonian Road and to the south of A501 Euston Road from A41 Baker Street to A201 Farringdon Road. Many of the changes to the south of A501 Euston Road are an effect of cars and taxis re-routing as a result of the closure of the northern section of Gordon Street and the relocation of taxis to Cobourg Street.
- 6.6.336 The most noticeable impacts in terms of traffic flow increases during the AM and PM peak hours, as shown on Figure 6-172 and Figure 6-173 are:
- A501 Euston Road, east of Euston station - increases in both directions and in both time periods;
 - A501 Euston Road, west of Euston station - decrease immediately west of A400 Hampstead Road, in the westbound direction, of 490 PCU and 545 PCU in the AM and PM peak hours respectively;
 - A400 Hampstead Road - increase in the AM and PM peak hours in both directions, south of Robert Street, due to taxis entering and exiting the set-down and pick-up facilities on Cobourg Street;
 - Gordon Street - closed in the 2041 HS2 Phase Two scenario. The maximum flow was 520 PCU, in the northbound direction in the PM peak hour in the 2041 future baseline;
 - Cobourg Street - gives access to the set-down and pick-up facilities. Only taxi movements are permitted in the southbound direction and northbound access for all vehicles through Stephenson Way, Starcross Street and Drummond Street is permitted;
 - A4200 Upper Woburn Place - increase in flow in the northbound and southbound directions in the AM and PM peak periods. The largest difference is in the PM peak hour, with an increase of 200 PCU due to the closure of Gordon Street;
 - A503 Camden Road - a decrease in traffic, in the northbound direction of 40 PCU in the AM peak hour and 190 PCU in the AM peak hour; and
 - A400 Camden High Street, a reduction of 350 PCU in the PM peak hour (northbound only road) and 100 PCU in the AM peak hour.

- 6.6.337 Taking the flows across the screenline to the north of A501 Euston Road, as shown in Table 6-166, most roads experience flow increases, with the greatest increases on A400 Hampstead Road (particularly in the southbound direction during the PM peak hour), Midland Road and A5202 Pancras Road (both in the PM peak hour only).
- 6.6.338 The total net flow across the screenline increases by between approximately 1,000 PCU per hour in the PM peak hour in the northbound direction (with a future baseline total of 3,965 PCU per hour) and approximately 1,030 PCU per hour in the southbound direction during the PM peak hour (with a future baseline total of 3,024 PCU per hour).
- 6.6.339 On the screenline to the south of A501 Euston Road, the closure of Gordon Street leads to a net decrease in total in the AM peak hour (approximately 105 PCU per hour in the northbound direction and approximately 220 PCU per hour in the southbound direction) but a small increase in the PM peak hour (approximately 10 PCU per hour in the northbound direction and approximately 60 PCU per hour in the southbound direction). This is probably associated with higher taxi flows, as traffic diverts onto adjacent roads. The roads immediately adjacent to Gordon Street, i.e. A400 Gower Street southbound and A4200 Woburn Place in both directions, experience the largest flow increases.
- 6.6.340 As with 2026, there is a negligible change between the 2041 future baseline and the Proposed Scheme across the Camden screenline with a 0% to -1% difference in all vehicles in both directions across the AM and PM peaks. HGV flows decrease by -2% in the AM and -1% in the PM peak. On individual roads, all vehicles increase by a slightly higher percentage but do not exceed +9% or -8% on any road, with the exception of the lightly trafficked Randolph Street which increases by 18%. The percentage increase in HGV's is greater but the absolute numbers are much lower than for all vehicles. The low level of flow changes reflects the fact that the impacts of the Proposed Scheme at Euston station decrease rapidly with increasing distance from the local area.
- 6.6.341 A number of links were triggered in the ES analysis for 2041 where the traffic increased between the future baseline and Proposed Scheme by more than 10%. These roads are set out in Table 6-169 and Table 6-170 for the AM and PM peak hours respectively. The majority of roads affected are relatively local to Euston station and within CFA1 and are the result of permanent changes to the highway network and increased taxis associated with increased rail demand. The most notable increases are on:
- AM peak hour:
 - A501 Euston Road (+150 vehicles/hour, +190 vehicles eastbound);
 - A400 Hampstead Road in both directions (+280 vehicles/hour);
 - Albany Street southbound (+180 vehicles);

- Park Village East southbound (+250 vehicles/hour); and
- Arlington Road southbound (+180 vehicles/hour).

6.6.342 There are reductions of +190 vehicles/hour on Gordon Street and Tavistock Square (both westbound).

- PM peak hour:
 - A501 Euston road (+325 vehicles hour westbound, +150 vehicles/hour eastbound));
 - A400 Hampstead Road Street southbound (+490 vehicles/hour);
 - North Gower Street southbound (+210 vehicles/hour); and
 - A400 Tottenham Court Road (+340 vehicles/hour).

6.6.343 There are limited impacts outside CFA1, with flow increases on:

- Abbey Road (CFA3 AM only);
- Albert Street (CFA2 AM only);
- Arlington Road (CFA1 and 2 AM and PM);
- Oval Road (CFA2 AM only);
- Parkway (CFA1 and 2 AM only);
- Sussex Gardens (CFA4 AM only);
- Caledonian Road (CFA2 PM only);
- Camden Park Road (CFA2 PM only); and
- York Way (CFA2 PM only).

6.6.344 There are negligible changes to HGV flows associated with the proposed scheme in 2026 with a number of roads having reduced HGV flows in the AM peak and virtually no change on any road for the PM peak.

Table 6-169: Triggered links 2041 AM peak

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
B507 Abbey Road (north of Grove End Road)	CFA3	Southbound	534	21	538	22	4	1	1%	3%
	CFA3	Southbound	331	12	416	14	85	2	26%	17%
Albert Street (north of Delancey Street)	CFA2	Southbound	8	0	50	0	42	0	544%	0%
A4201 Albany Street (south of Longford Street)	CFA1	Southbound	249	26	269	23	20	-3	8%	-12%
	CFA1	Southbound	253	14	429	22	176	8	70%	60%
Arlington Road (south of Delancey Street)	CFA1 & 2	Northbound	14	0	33	1	19	1	131%	161%
	CFA1 & 2	Southbound	125	2	309	12	184	10	147%	453%
B401 Bow Street (between Long Acre and Russell Street)	CFA1	Northbound	199	8	246	7	47	0	24%	-5%
	CFA1	Southbound	689	57	671	59	-18	2	-3%	3%
Byng Place (between Gordon Square and Malet Place)	CFA1	Westbound	705	26	642	31	-64	5	-9%	20%
	CFA1	Northbound	80	6	127	8	47	2	59%	37%
Chalton Street (north of Euston Road)	CFA1	Northbound	91	4	148	4	58	0	63%	5%
	CFA1	Southbound	109	3	138	2	29	-1	26%	-36%
Churchway/Grafton Place (north of Euston Road)	CFA1	Northbound	18	0	138	0	120	0	669%	-
	CFA1	Southbound	101	1	118	1	17	0	17%	-18%
Crawford Street (between Seymour Place and Wyndham Place)	CFA1	Westbound	179	6	180	6	1	-1	1%	-9%
	CFA1	Eastbound	258	5	321	4	63	-1	25%	-14%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
B512 Crowndale Road (between Camden Street and Bayham Street)	CFA1	Westbound	128	5	170	8	43	3	33%	61%
	CFA1	Eastbound	199	7	190	8	-9	0	-5%	5%
A503 Delancey Street (between Arlington Road and Camden High Street)	CFA1	Westbound	834	32	973	44	139	12	17%	38%
Devonshire Street (between Devonshire Place and Marylebone High Street)	CFA1	Westbound	191	7	188	6	-3	0	-2%	-6%
	CFA1	Eastbound	395	32	437	19	42	-13	11%	-41%
B401 Endell Street (between Long Acre and Shelton Street)	CFA1	Northbound	433	44	432	44	-1	0	0%	0%
	CFA1	Southbound	344	34	389	33	46	-1	13%	-4%
A501 Euston Road (between Upper Woburn Place and Gordon Street)	CFA1	Westbound	1510	86	1662	94	151	8	10%	9%
	CFA1	Eastbound	1519	80	1711	88	192	8	13%	10%
A400 Euston Road/Gower Street slip road	CFA1	Westbound	36	0	36	0	0	0	0%	-
	CFA1	Eastbound	591	28	656	23	66	-5	11%	-18%
A501 Euston Road slip road at North Gower Street	CFA1	Eastbound	578	44	728	26	149	-18	26%	-42%
A4200 Eversholt Street/Euston Square (between Doric Way and Grafton Place)	CFA1	Northbound	309	17	407	15	99	-2	32%	-11%
	CFA1	Southbound	282	14	349	12	66	-2	23%	-14%
Gordon Square (between Tavistock Place and Byng Place)	CFA1	Westbound	540	35	352	18	-188	-18	-35%	-50%
	CFA1	Eastbound	31	2	79	4	48	2	155%	130%
A400 Gower Street (south of Torrington Place)	CFA1	Southbound	308	14	426	12	118	-2	38%	-15%
Granby Terrace (between Stanhope Street and Hampstead Road)	CFA1	Eastbound	156	5	230	3	75	-2	48%	-35%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A5200 Gray's Inn Road (between Sidmouth Street and Swinton Street)	CFA1	Northbound	266	13	310	15	44	2	17%	19%
	CFA1	Southbound	141	3	151	3	10	0	7%	2%
B506 Great Portland Street (between Bolsover Street and Euston Road)	CFA1	Southbound	404	23	479	25	75	2	19%	8%
B507 Grove End Road (between Hall Road and St. John's Wood Road)	CFA1	Northbound	371	14	358	13	-13	0	-4%	-2%
	CFA1	Southbound	460	20	572	25	112	5	24%	23%
A400 Hampstead Road (between Robert Street and Drummond Street)	CFA1	Northbound	338	17	620	11	282	-6	83%	-36%
	CFA1	Southbound	633	52	917	36	284	-17	45%	-32%
Homer Street/Row (between Old Marylebone Road and Seymour Place)	CFA1	Westbound	115	3	91	2	-24	0	-21%	-15%
	CFA1	Eastbound	156	1	239	1	83	0	53%	-8%
B504 Judd Street (between Bidborough Street and Euston Road)	CFA1	Northbound	200	15	242	14	42	-1	21%	-7%
	CFA1	Southbound	474	26	465	27	-9	1	-2%	3%
Longford Street (east of Albany Street)	CFA1	Westbound	178	7	287	15	109	8	62%	112%
	CFA1	Eastbound	120	7	153	4	32	-3	27%	-46%
A404 Harrow Road (north of Edgware Road)	CFA1	Eastbound	329	24	370	20	42	-4	13%	-17%
Mornington Crescent (between Arlington Road and Hampstead Road)	CFA1	Westbound	28	1	100	2	73	2	262%	236%
	CFA1	Eastbound	177	5	160	6	-17	1	-10%	10%
Mornington Street (west of Arlington Road)	CFA1	Westbound	114	2	350	12	237	11	208%	693%
	CFA1	Eastbound	201	5	221	6	21	1	10%	19%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
New Cavendish Street (between Cleveland Street and Great Portland Street)	CFA1	Eastbound	187	39	239	43	52	4	28%	10%
North Gower Street (south of Euston Street)	CFA1	Northbound	70	14	18	0	-52	-14	-74%	-100%
	CFA1	Southbound	11	0	57	1	46	0	416%	24%
Old Marylebone Road (north of Homer Row)	CFA1	Northbound	400	10	485	10	85	0	21%	-4%
	CFA1	Southbound	630	36	623	32	-8	-4	-1%	-11%
Osnaburgh Street (south of Triton Street)	CFA1	Southbound	468	28	641	36	173	8	37%	29%
Outer Circle (between Avenue Road and Gloucester Gate)	CFA1	Westbound	301	0	328	0	26	0	9%	-
	CFA1	Eastbound	402	0	473	0	70	0	17%	-
Oval Road (south of Jamestown Road)	CFA2	Northbound	216	5	221	5	5	0	2%	0%
	CFA2	Southbound	7	0	50	0	42	0	568%	-
B524 Paddington Street (between Nottingham Place and Bakers Street)	CFA1	Westbound	407	22	402	21	-4	-1	-1%	-4%
	CFA1	Eastbound	493	24	543	22	50	-2	10%	-7%
Park Square East (between Outer Circle and Marylebone Road)	CFA1	Northbound	169	0	210	0	41	0	24%	-
	CFA1	Southbound	421	0	429	0	8	0	2%	-
Park Village East (between Granby Terrace and Mornington Street)	CFA1	Northbound	26	0	59	1	33	0	127%	177%
	CFA1	Southbound	239	6	489	13	250	7	104%	123%
A4201 Parkway (between Delancey Street and Albert Road)	CFA1 & 2	Northbound	737	36	826	39	89	2	12%	6%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Pratt Street (between Bayham Street and Camden High Street)	CFA1	Westbound	661	20	744	28	83	9	13%	44%
Seymour Place (between George Street and Upper Berkeley Street)	CFA1	Northbound	102	8	101	8	-1	0	-1%	2%
	CFA1	Southbound	302	34	363	36	62	1	20%	3%
Stanhope Street (north of Robert Street)	CFA1	Northbound	168	6	171	6	3	0	2%	7%
	CFA1	Southbound	119	2	304	12	185	10	156%	470%
A4209 Sussex Gardens (between Edgware Road and Sale Place)	CFA4	Northbound	470	12	545	12	75	0	16%	-4%
	CFA4	Southbound	763	27	758	27	-5	0	-1%	-2%
Tavistock Square	CFA1	Westbound	540	35	352	18	-188	-18	-35%	-50%
	CFA1	Eastbound	31	2	79	4	48	2	155%	130%
Torrington Place (west of Gower Street)	CFA1	Westbound	171	6	279	14	108	8	63%	126%
A400 Tottenham Court Road (north of Grafton Way)	CFA1	Northbound	801	57	949	58	148	2	18%	3%

Table 6-170: Triggered links 2041 PM peak

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A4201 Albany Street (south of Robert Street)	CFA1	Northbound	259	3	305	4	46	1	18%	32%
	CFA1	Southbound	330	1	436	3	106	1	32%	88%
Arlington Road (between Mornington Street and Mornington Crescent)	CFA1 & 2	Northbound	40	0	94	0	54	0	137%	-15%
	CFA1 & 2	Southbound	166	3	291	3	125	0	75%	6%
B525 Avenue Road (South of A5205 Prince Albert Road)	CFA1	Northbound	508	0	517	0	9	0	2%	0%
	CFA1	Southbound	518	0	575	0	57	0	11%	0%
Caledonian Road (between Pentonville Road and Caledonia Street)	CFA2	Southbound	659	14	753	14	94	0	14%	3%
Camden Park Road (East of Camden Park Road)	CFA2	Northbound	519	15	584	16	66	1	13%	4%
Churchway (Grafton Pl/north of Euston Road)	CFA1	Northbound	18	0	84	0	66	0	367%	-
	CFA1	Southbound	89	0	89	0	0	0	0%	-100%
Devonshire Street (south of Weymouth Street)	CFA1	Northbound	331	6	346	5	15	0	5%	-4%
	CFA1	Southbound	385	6	437	6	52	0	14%	3%
Drummond Street (between Hampstead Road and North Gower Street)	CFA1	Westbound	108	1	41	0	-66	-1	-62%	-93%
	CFA1	Eastbound	47	0	244	1	197	0	421%	106%
A501 Euston Road (between Upper Woburn Place and Gordon Street)	CFA1	Westbound	1291	15	1617	18	326	3	25%	22%
	CFA1	Eastbound	1529	8	1679	8	150	0	10%	-3%
A400 Euston Road/Gower Street slip road	CFA1	Westbound	34	0	34	0	0	0	1%	-

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A501 Euston Road slip road at North Gower Street	CFA1	Eastbound	306	4	485	3	178	0	58%	-12%
	CFA1	Westbound	197	2	338	2	141	0	72%	-19%
	CFA1	Eastbound	154	4	173	4	19	0	12%	5%
Euston Street (between Cobourg Street and North Gower Street)	CFA1	Westbound	2	0	65	0	63	0	3371%	3067%
A4200 Eversholt Street/Euston Square (between Doric Way and Grafton Place)	CFA1	Northbound	329	4	475	2	145	-2	44%	-47%
	CFA1	Southbound	348	3	355	1	8	-2	2%	-57%
A41 Gloucester Place	CFA1	Northbound	978	25	1103	25	124	0	13%	0%
Goods Way (between Granary Square and York Way)	CFA1	Westbound	352	9	422	9	70	0	20%	-3%
	CFA1	Eastbound	463	5	602	5	139	0	30%	2%
Grafton Way (between Huntley Street and Tottenham Court Road)	CFA1	Westbound	204	3	263	4	59	0	29%	10%
A5200 Gray's Inn Road (between Acton Street and Sidmouth Street)	CFA1	Northbound	406	6	531	7	125	1	31%	19%
	CFA1	Southbound	94	1	98	1	4	0	4%	-8%
Great Cumberland Place (between Bayswater Road and Seymour Street)	CFA1	Northbound	206	0	259	0	53	0	26%	0%
	CFA1	Southbound	316	5	314	5	-2	0	-1%	1%
B502 Guilford Street (west of Gray's Inn Road)	CFA1	Westbound	319	4	580	8	260	4	82%	110%
	CFA1	Eastbound	538	11	562	13	25	2	5%	22%
A400 Hampstead Road (between Robert Street and Drummond Street)	CFA1	Northbound	633	6	697	3	64	-2	10%	-44%
	CFA1	Southbound	341	2	827	1	486	0	142%	-17%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Howland Street (between Fitzroy Street and Cleveland Street)	CFA1	Westbound	565	8	628	8	63	0	11%	-5%
B504 Judd Street (north of Bernard Street)	CFA1	Northbound	389	6	445	6	56	0	14%	-3%
B524 Marylebone High Street (north of Devonshire Street)	CFA1	Northbound	38	0	53	0	15	0	40%	0%
	CFA1	Southbound	702	7	825	8	122	1	17%	8%
Midland Road (north of A501 Euston Road)	CFA1	Southbound	833	13	969	13	136	0	16%	1%
Mornington Crescent (between Arlington Road and Eversholt Street)	CFA1	Westbound	72	0	140	0	68	0	94%	23%
	CFA1	Eastbound	190	3	316	3	126	0	66%	6%
Mornington Street (between Park Village East and Mornington Terrace)	CFA1	Westbound	59	0	162	1	103	1	175%	385%
	CFA1	Eastbound	208	3	397	4	189	1	91%	19%
New Cavendish Street (between Howland Street and Great Portland Street)	CFA1	Westbound	349	9	393	9	45	0	13%	-4%
North Gower Street (south of Stephenson Way)	CFA1	Northbound	81	1	62	1	-18	-1	-23%	-42%
	CFA1	Southbound	17	0	226	1	209	0	1261%	98%
Outer Circle (north of Euston Road)	CFA1	Northbound	752	0	787	0	35	0	5%	-
	CFA1	Southbound	211	0	266	0	55	0	26%	-
A5202 Pancras Road (north of Euston Road/parallel to St Pancras International)	CFA1	Northbound	644	5	819	6	175	0	27%	8%
	CFA1	Southbound	165	2	176	2	11	0	6%	3%
Park Square East (between Marylebone Road and Outer Circle)	CFA1	Northbound	432	0	459	0	27	0	6%	-
	CFA1	Southbound	186	0	228	0	42	0	23%	-

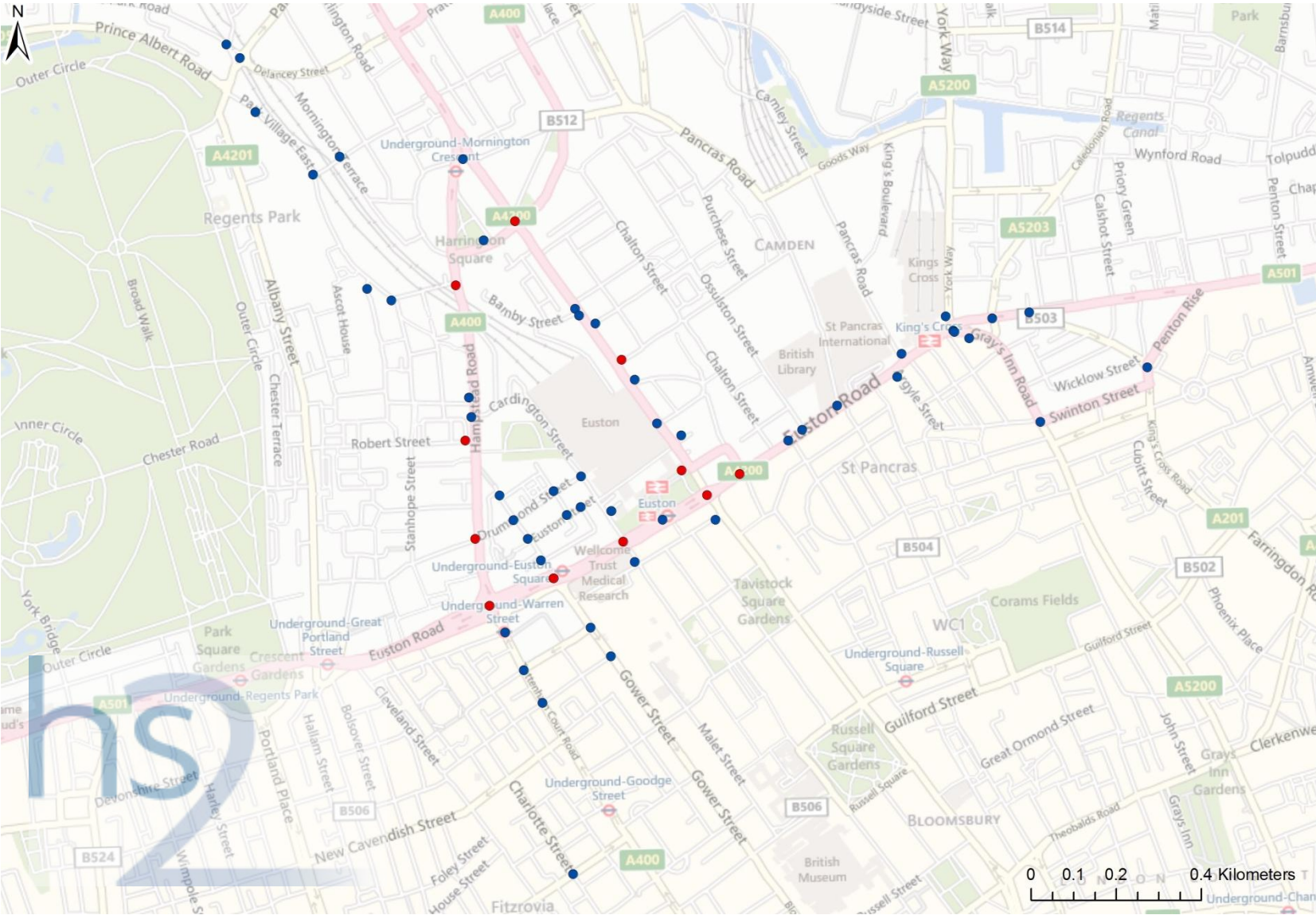
Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Park Village East (south of Mornington Street)	CFA1	Northbound	21	0	80	1	59	0	286%	101%
	CFA1	Southbound	375	3	356	2	-19	-1	-5%	-28%
Red Lion Street (north of High Holborn)	CFA1	Northbound	169	5	216	4	47	-1	28%	-11%
	CFA1	Southbound	207	7	185	5	-22	-2	-10%	-25%
A4201 Portland Place (between Devonshire Street and Weymouth Street)	CFA1	Northbound	338	3	383	4	46	1	13%	44%
	CFA1	Southbound	107	2	119	1	12	-1	11%	-36%
Seymour Street (west of Portman Street)	CFA1	Westbound	188	2	182	2	-6	0	-3%	15%
	CFA1	Eastbound	564	1	619	1	56	0	10%	17%
Stanhope Street (north of Robert Street)	CFA1	Northbound	2	0	120	1	118	1	6481%	975%
	CFA1	Southbound	23	0	69	1	45	1	195%	393%
Tavistock Place (between Woburn Place and Marchmont Street)	CFA1	Westbound	95	1	51	1	-43	0	-46%	-18%
	CFA1	Eastbound	223	3	274	3	51	0	23%	18%
B524 Thayer Street (north of New Cavendish Street)	CFA1	Northbound	331	6	346	5	15	0	5%	-4%
	CFA1	Southbound	385	6	437	6	52	0	14%	3%
A401 Theobald's Road (east of Old North Street)	CFA1	Westbound	404	8	407	8	2	0	1%	0%
	CFA1	Eastbound	343	14	456	15	114	1	33%	7%
Torrington Place (between Malet Street and Gower Street)	CFA1	Westbound	156	3	196	3	41	1	26%	21%
	CFA1	Eastbound	387	4	387	5	-1	1	0%	36%

Location	CFA	Direction	2041 baseline flow		2041 with HS2 traffic		With HS2 actual		With HS2 %	
			All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
A400 Tottenham Court Road (between Warren Street and Euston Road)	CFA1	Northbound	449	6	788	5	340	-1	76%	-9%
A4200 Upper Woburn Place (between Euston Road and Endsleigh Gardens)	CFA1	Northbound	437	4	626	3	189	-1	43%	-29%
	CFA1	Southbound	673	7	769	6	96	-1	14%	-20%
York Way (between Goods Way and Copenhagen Street)	CFA2	Northbound	789	16	937	17	148	0	19%	2%
	CFA2	Southbound	595	16	631	16	36	0	6%	0%

Junction performance 2026

- 6.6.345 A series of junctions in the vicinity of Euston station and in the wider Euston area have been modelled to determine what impact, if any, the Proposed Scheme will have. The junctions that have been modelled are shown in Figure 6-174.

Figure 6-174: Local junction assessment



6.6.346 The modelling results of a number of junctions in the direct vicinity of Euston station are presented in this section (those shown in red on Figure 6-174). These junctions include:

- Euston Circus (A501 Euston Road/A400 Tottenham Court Road/A400 Hampstead Road);
- A501 Euston Road/A400 Gower Street;
- A501 Euston Road/A400 Upper Woburn Place/Euston Square;
- A501 Euston Road/Churchway/Dukes Road;
- A4200 Eversholt Street/Grafton Place/Euston bus station;
- A4200 Eversholt Street/A400 Oakley Square/A400 Lidlington Place;
- A400 Hampstead Road/Drummond Street;
- A400 Hampstead Road/Granby Terrace/Harrington Square;
- A400 Hampstead Road/Robert Street/Cobourg Street;
- A501 Euston Road/Euston bus station; and
- A4200 Eversholt Street/northern bus station.

Euston Circus

6.6.347 Euston Circus is the common name for the junction of A501 Euston Road with A400 Hampstead Road and A400 Tottenham Court Road. This junction will experience increased traffic flows as a result of the Proposed Scheme. These traffic flow increases are largely associated with taxi movements to and from the new taxi facility on Cobourg Street which has its entry and exit on A400 Hampstead Road.

6.6.348 Table 6-171 presents the results of the modelling undertaken for Euston Circus. The modelling has been undertaken using TRANSYT and the results are presented in terms of the degree of saturation (DoS) and mean maximum queue (MMQ), which is measured in PCU. The junction has been modelled at a cycle time of 96 seconds.

6.6.349 The results show Euston Circus is forecast to operate at or over capacity on many approaches during the 2026 HS2 Phase One scenario during the AM peak hour. However, during the future baseline scenario, all but one approach (the left turn from Euston Road west) is also forecast to operate over capacity and, as such, mitigation measures should be considered at this junction irrespective of the Proposed Scheme.

- 6.6.350 During the PM peak hour, three approaches to the junction are forecast to operate over capacity in the 2026 HS2 Phase One scenario. However, these approaches are also forecast to be approaching capacity during the future baseline scenario. The increase in the DoS on queueing on these approaches is associated with the reassigned and additional taxi movements to and from, the new taxi facility on Cobourg Street which will be accessible from A400 Hampstead Road.

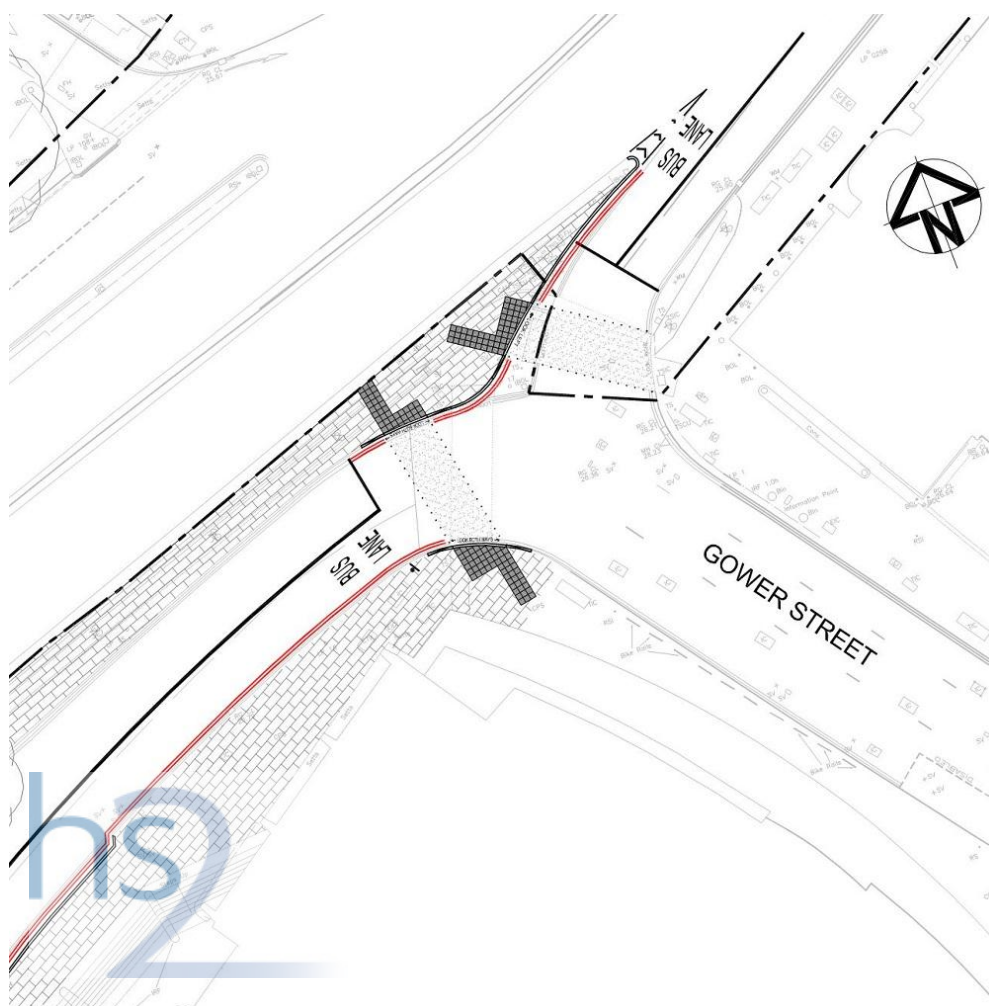
Table 6-171: Euston Circus modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 'with HS2'			2026 baseline			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Right	427	59%	10	498	67%	8	464	92%	17	598	103%	34
	Left, ahead	736	129%	109	836	142%	152	226	64%	6	363	84%	12
A501 Euston Road east	Ahead	92	61%	3	83	54%	3	86	46%	3	81	54%	3
A400 Tottenham Court Road	Left, ahead, right	1,102	120%	123	1,224	140%	205	1,263	90%	33	1,336	103%	65
A501 Euston Road west	Left	231	62%	6	392	106%	27	309	77%	9	318	86%	11
	Ahead	169	35%	4	201	42%	5	394	76%	11	417	87%	14
	Right	523	115%	52	577	127%	81	440	89%	15	461	101%	25

A501 Euston Road/A400 Gower Street

- 6.6.351 Table 6-172 presents the results of the modelling undertaken for the junction of A501 Euston Road with A400 Gower Street. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.352 The modelling assumed the new scheme design which is currently under construction. The junction layout is shown in Figure 6-175.

Figure 6-175: A501 Euston Road/A400 Gower Street



- 6.6.353 The results show that the junction of A501 Euston Road with A400 Gower Street is forecast to be over-capacity during the AM peak hour for future baseline with HS2 Phase One scenarios. As the junction is also forecast to be over-capacity during the future baseline scenario, mitigation should be considered regardless of the Proposed Scheme.

- 6.6.354 During the PM peak hour, the junction operates within model theoretical capacity on all approaches during the future baseline and HS2 Phase One scenarios. While the A501 Euston Road east left turn and A501 Euston Road west right turn approaches both have DoS values of 92% during the HS2 Phase One scenario, the level of queueing predicted can be accommodated with the available link length.

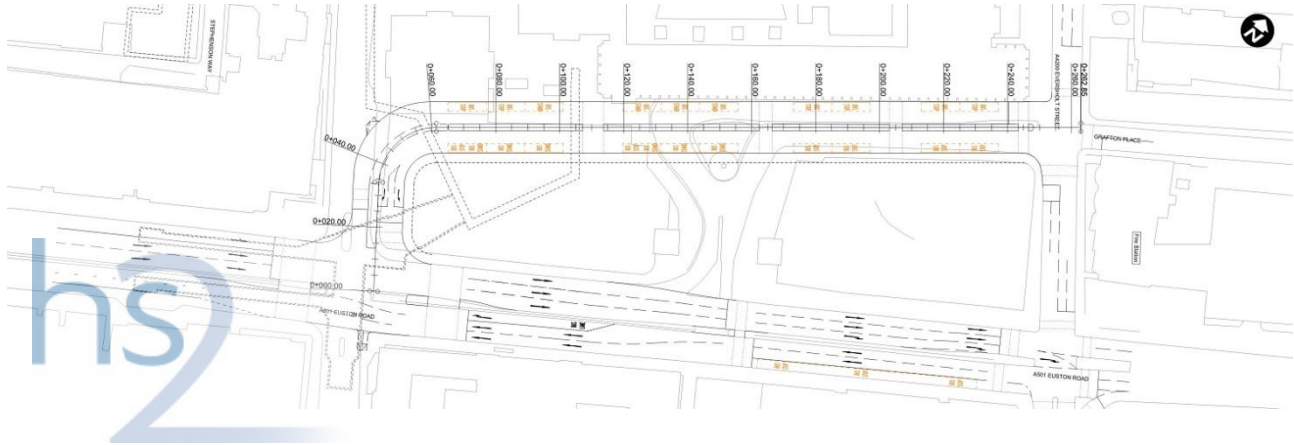
Table 6-172: A501 Euston Road/A400 Gower Street modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 'with HS2'			2026 baseline			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A501 Euston Road east	Left	525	101%	28	609	114%	57	480	80%	14	552	92%	18
	Left, ahead	148	4%	4	150	39%	2	138	31%	4	144	32%	4
A501 Euston Road west	Right	1,289	100%	42	1,443	104%	57	741	77%	20	899	92%	20

A501 Euston Road/bus station entrance

6.6.355 Table 6-173 presents the results of the modelling undertaken for the new junction of A501 Euston Road with the bus station entrance. Gordon Street has also been included in the modelling of this junction although this will only be for use by cyclists. The layout of the junction can be seen in Figure 6-176.

Figure 6-176: A501 Euston Road/Euston bus station layout



6.6.356 The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). It should be noted that as this junction forms part of the Proposed Scheme, no future baseline results are presented. The junction has been modelled at a cycle time of 96 seconds.

Table 6-173: A501 Euston Road/bus station modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2026 'with HS2'			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ
Euston bus station	Left	125	36%	2	167	32%	2
	Right	60	74%	5	60	89%	7
A501 Euston Road east	Ahead	176	78%	6	1,570	94%	9
	Right	1,278	68%	26	176	84%	27
Gordon Street	Ahead	20	10%	1	14	6%	0
A501 Euston Road west	Ahead	1,254	62%	26	1,337	68%	26
	Left, ahead	486	50%	8	741	80%	18

- 6.6.357 The results show that the junction of A501 Euston Road with the bus station is forecast to operate within the model theoretical capacity on all approaches during the AM and PM peak hours for the HS2 Phase One scenario. The largest predicted DoS of 94% is predicted on the A501 Euston Road east approach to the junction during the PM peak hour with a queue of 9 PCU. The queue can be accommodated within the available link length. The queues predicted on the A501 Euston Road west approach to the junction can also be accommodated within the available link length.

A501 Euston Road/A4200 Upper Woburn Place/Euston Square

- 6.6.358 Table 6-174 presents the results of the modelling undertaken for the junction of A501 Euston Road with A4200 Upper Woburn Place and Euston Square for the HS2 Phase One scenario. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.

Table 6-174: A501 Euston Road/A4200 Upper Woburn Place/Euston Square modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 'with HS2'			2026 baseline			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
Euston Square	Ahead	401	65%	4	410	69%	7	294	41%	3	393	53%	7
A501 Euston Road east	Ahead	887	73%	20	898	72%	25	864	74%	20	1,034	86%	26
	Left, ahead	493	80%	13	518	82%	16	470	79%	11	522	85%	15
Upper Woburn Place	Left, ahead	471	82%	14	444	84%	13	594	90%	19	613	93%	21
	Ahead	70	25%	2	92	38%	3	62	18%	1	94	27%	2
A501 Euston Road west	Right	311	84%	10	338	82%	10	268	84%	8	293	92%	12
	Ahead	1,340	55%	7	1,394	57%	15	1,588	71%	20	1,731	81%	30

- 6.6.359 The results show that the junction of A501 Euston Road with the A4200 Upper Woburn Place and Euston Square is forecast to operate within theoretical capacity on all approaches during the AM and PM peak hours for the HS2 Phase One scenario. The largest predicted DoS of 93% is predicted on the A4200 Upper Woburn Place approach to the junction during the PM peak hour with a queue of 21 PCU. However, the queue can be accommodated within the available link length. The queues predicted on the A501 Euston Road east and west approaches to the junction can also be accommodated within the available link length.

A501 Euston Road/Churchway/Dukes Road

- 6.6.360 Table 6-175 presents the results of the modelling undertaken for the junction of A501 Euston Road with Churchway and Dukes Road. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.361 The results show that the junction of A501 Euston Road with the Churchway and Dukes Road is forecast to operate within modelled theoretical capacity on all approaches during the AM and PM peak hours for the HS2 Phase One scenario. The largest predicted DoS of 87% is predicted on the A501 Euston Road east (left and ahead movements) approach to the junction during the PM peak hour, with a queue of 10 PCU. The queue can be accommodated within the available link length. The queues predicted on the A501 Euston Road west approach to the junction can also be accommodated within the available link length.

Table 6-175: A501 Euston Road/Churchway/Dukes Road modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 'with HS2'			2026 baseline			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
Churchway	Left, ahead, right	260	78%	9	273	74%	9	275	82%	9	293	83%	10
A501 Euston Road east	Ahead, right	388	77%	11	109	25%	2	351	86%	12	130	48%	2
	Left, ahead	736	60%	2	969	77%	15	827	68%	11	1,107	87%	12
	Ahead	434	34%	1	442	36%	1	382	30%	1	496	40%	5
Dukes Road	Left, ahead, right	30	9%	1	30	8%	1	30	9%	1	30	9%	1
A501 Euston Road west	Left, ahead	1,347	75%	30	1,401	59%	14	1,595	86%	31	1,737	74%	14

A4200 Eversholt Street/Grafton Place/Euston bus station

- 6.6.362 Table 6-176 presents the results of the modelling undertaken for the junction of A4200 Eversholt Street with Grafton Place and Euston bus station. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.363 The results show that the junction of A4200 Eversholt Street with Grafton Place and Euston bus station is forecast to operate within modelled theoretical capacity on all approaches, during the AM and PM peak hours for the HS2 Phase One scenario. The queues predicted at the junction can also be accommodated within the available link length.

Table 6-176: A4200 Eversholt Street/Grafton Place/Euston bus station modelling results - 2026

Approach	Movement	AM Peak (08:00-09:00)						PM Peak (17:00-18:00)					
		2026 baseline			2026' with HS2'			2026 baseline			2026 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Left, ahead	404	87%	13	483	80%	15	343	74%	10	425	75%	12
Grafton Place	Left, right	176	78%	6	255	84%	9	196	73%	6	262	79%	9
Euston Square	Ahead, right	398	61%	3	374	65%	2	452	69%	6	385	69%	7
Euston bus station	Left, ahead, right	289	84%	10	218	85%	8	213	73%	7	257	81%	7

A4200 Eversholt Street/A400 Oakley Square/Lidlington Place

- 6.6.364 Table 6-177 results shows that during the AM peak hour, the junction of A4200 Eversholt Street with A400 Oakley Square and Lidlington place is forecast to operate at or above capacity on three approaches to the junction for the HS2 Phase One scenario. However when compared with the future baseline scenario, the results show a slight improvement on two approaches with a reduction in the DoS and level of queueing.
- 6.6.365 During the PM peak hour, the junction is forecast to operate with sufficient spare capacity on all approaches to the junction for both the future baseline and HS2 Phase One scenarios.
- 6.6.366 Further analysis has shown that if the cycle time is increased from 72 seconds (which it currently operates at) to 96 seconds, the junctions would operate within theoretical capacity on all approaches to the junction during the AM and PM peak hours.

Table 6-177: A4200 Eversholt Street/A400 Oakley Square/Lidlington Place modelling results -2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 with HS2			2026 baseline			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Ahead, right	239	62%	5	238	38%	4	185	35%	3	194	35%	3
A400 Oakley Square	Left, ahead	528	96%	18	498	100%	21	412	79%	9	366	73%	8
	Ahead	576	105%	32	499	100%	21	413	79%	9	367	73%	8
	Right	10	2%	0	10	2%	0	6	1%	0	6	1%	0
A4200 Eversholt Street south	Left, ahead	611	116%	60	619	108%	41	464	84%	11	488	85%	12

A400 Hampstead Road/Drummond Street

- 6.6.367 Table 6-178 presents the results of the modelling undertaken for the junction of A400 Hampstead Road with Drummond Street. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.368 The results show that the junction of A400 Hampstead Road with Drummond Street is forecast to operate with sufficient spare capacity on all approaches to the junction, during the AM and PM peak hour, for the HS2 Phase One scenario. The queues predicted at the junction can also be accommodated within the available link length.

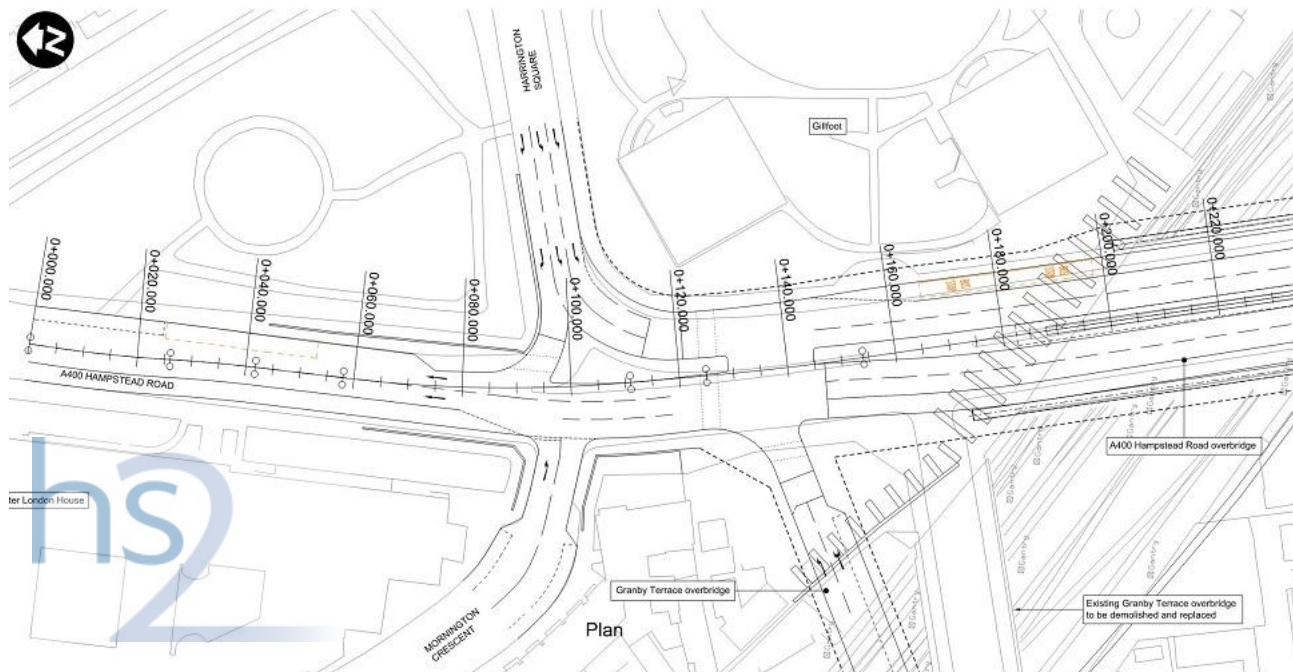
Table 6-178: A400 Hampstead Road/Drummond Street modelling results -2026

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2026 baseline			2026 with HS2			2026 baseline			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Left, ahead	996	83%	22	704	58%	11	501	45%	8	823	68%	15
	Ahead	244	26%	4	706	75%	16	210	25%	3	241	26%	4
Drummond Street east	Left, ahead	205	82%	7	120	48%	3	156	45%	4	161	64%	5
A400 Hampstead Road south	Left, ahead	551	24%	6	754	30%	13	601	32%	9	723	35%	9
Drummond Street west	Right	101	42%	3	175	72%	6	131	39%	3	120	50%	3

A400 Hampstead Road/Granby Terrace/Harrington Square

- 6.6.369 The Granby Terrace approach to the junction with the A400 Hampstead Road will be realigned, as part of the Proposed Scheme, and form a new junction with A400 Hampstead Road and Harrington Square. The approach currently comprises two lanes, one for left turning vehicles only and one for right turning vehicles only onto Hampstead Road. As part of the Proposed Scheme, the Granby Terrace approach will comprise one lane for left turning vehicles only, and one for left and right turning vehicles combined. The junction layout can be seen in Figure 6-177.

Figure 6-177: A400 Hampstead Road/Granby Terrace/Harrington Square layout



- 6.6.370 Table 6-179 presents the results of the modelling undertaken for the junction of A400 Hampstead Road with Granby Terrace and Harrington Square. The modelling has been undertaken using LINSIG and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.371 It should be noted that, as this new junction layout forms part of the Proposed Scheme, no future baseline results are presented.
- 6.6.372 The results show that the junction of A400 Hampstead Road with Granby Terrace and Harrington Square is forecast to operate with sufficient spare capacity on all approaches to the junction, during the AM and PM peak hours, for the HS2 Phase One scenario. The queues predicted at the junction can also be accommodated within the available link length.

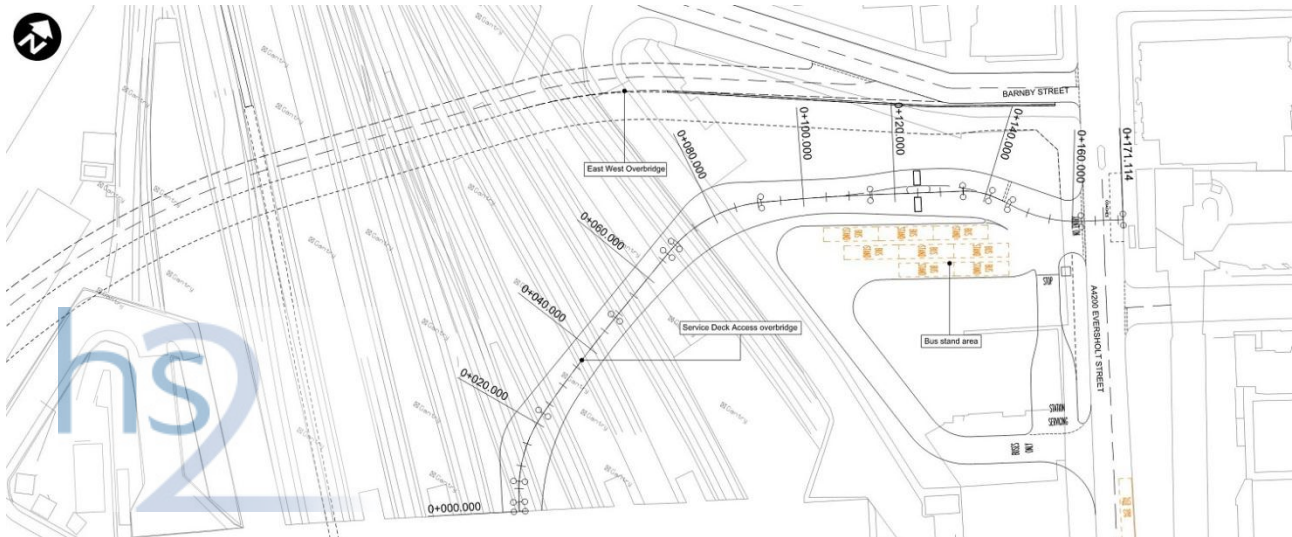
Table 6-179: A400 Hampstead Road/Granby Terrace/Harrington Square modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Left	265	36%	5	331	40%	6
	Left	531	64%	12	320	42%	6
A400 Hampstead Road south	Ahead	72	9%	1	125	16%	2
	Ahead	317	38%	6	551	70%	13
	Ahead	209	25%	4	364	46%	7
Granby Terrace	Left	92	61%	3	112	60%	4
	Left, right	92	61%	3	111	59%	4
Mornington Crescent	Left	24	6%	0	41	13%	1
Harrington Square	Right	157	34%	4	178	38%	4

A4200 Eversholt Street/northern bus standing area

6.6.374 The new junction of A4200 Eversholt Street with the new northern bus standing area has been modelled to determine the impact of the junction on the local highway network. The junction layout can be seen in Figure 6-178.

Figure 6-178: A4200 Eversholt Street/northern bus standing area layout



6.6.375 Table 6-180 presents the results of the modelling undertaken for the junction of A4200 Eversholt Street with the northern bus standing area. Polygon Road has also been included in the model, given its proximity to the northern bus standing area. While this is a give-way junction, the modelling has been undertaken using TRANSYT (as part of the wider A501 Euston Road model) and the results are presented in terms of the DoS and MMQ (in PCU).

6.6.376 It should be noted that as this new junction forms part of the Proposed Scheme, no future baseline results are presented.

Table 6-180: A4200 Eversholt Street/northern bus standing area/Polygon Road modelling results - 2026

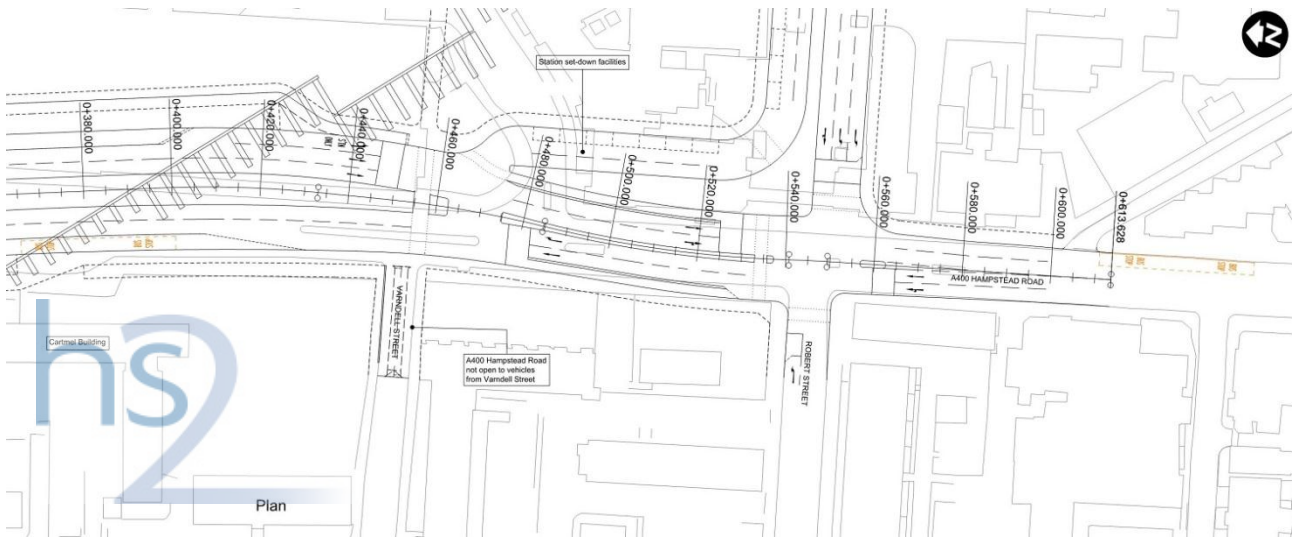
Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Left, ahead, right	512	28%	0	443	25%	0
Polygon Road	Left, ahead, right	104	23%	0	22	5%	0
A4200 Eversholt Street south	Left, ahead, right	519	31%	0	542	32%	0
Northern Bus Standing Area	Left, ahead, right	58	12%	0	58	12%	0

6.6.377 The results show that the junction of A4200 Eversholt Street with the northern bus standing area and Polygon Road is forecast to operate with sufficient spare capacity on all approaches to the junction, during the AM and PM peak hour, for the HS2 Phase One scenario. No queueing has been predicted.

A400 Hampstead Road/Robert Street/Cobourg Street

6.6.378 The existing priority junction of Robert Street with A400 Hampstead Road is to be altered as part of the Proposed Scheme. The Robert Street approach to the junction currently comprises one lane which is one way for left turning vehicles. The A400 Hampstead Road approach to the junction comprises one lane in each direction. Under the proposed scheme the junction will become signalised. It is proposed that the layout approach on Robert Street will remain the same. The junction layout can be seen in Figure 6-179.

Figure 6-179: A400 Hampstead Road/Robert Street/Cobourg Street layout



6.6.380 The A400 Hampstead Road approaches will comprise two lanes in each direction and there will be a new link introduced into the junction named Cobourg Street that will be an exit only link from the taxi pick up/drop of area. Cobourg Street will comprise of three lanes, two left turn lanes and an ahead and right turn lane. The new junction design will accommodate the traffic flow associated with the new taxi facility on Cobourg Street.

6.6.381 Table 6-181 presents the results of the modelling undertaken for A400 Hampstead Road with Robert Street and Cobourg Street. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.

6.6.382 It should be noted that, as this new junction forms part of the Proposed Scheme, no future baseline results are presented.

Table 6-181: A400 Hampstead Road/Robert Street/Cobourg Street modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Ahead	679	71%	15	562	59%	11
	Ahead, right	174	18%	1	127	13%	0
Cobourg Street	Left	358	28%	7	82	25%	6
	Ahead, right	18	12%	1	317	55%	3
A400 Hampstead Road south	Left, ahead	721	41%	12	792	45%	14
Robert Street	Left	10	7%	0	10	7%	0
A400 Hampstead Road north (at	Left	42	4%	0	199	19%	2

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
Varndell Street)	Ahead	863	42%	13	578	27%	8
A400 Hampstead Road south (at Varndell Street)	Ahead	403	39%	2	741	69%	15
	Right	280	48%	8	185	34%	5

- 6.6.383 The results show that the junction of A400 Hampstead Road with Robert Street and Cobourg Street is forecast to operate with sufficient spare capacity on all approaches to the junction, during the AM and PM peak hours, for the HS2 Phase One scenario. The predicted level of queueing can be accommodated within the available link length.

Other junctions

- 6.6.384 A series of other signalised junctions have also been modelled along the A501 Euston Road and A400 Hampstead Road corridors. The results of these models show that spare capacity will be available at all junctions in the future baseline and with the HS2 Phase One scenario, with the exception of the junction of A501 Euston Road with A5202 Pancras Road. At this junction the right turn from A501 Euston Road (westbound) to A5202 Pancras Road experiences a DoS in excess of 100%. However, the DoS is also in excess of 100% for the future baseline scenario and, as such, mitigation measures should be considered irrespective of the Proposed Scheme.
- 6.6.385 Other minor junctions in the vicinity of the proposed scheme have been modelled using the priority junction (and roundabout) modelling software, Junctions 8.
- 6.6.386 The priority junctions that are located close to the station that could be affected by any increase or rerouted traffic are the following junctions:
- Drummond Street/North Gower Street;
 - Upper Woburn Place/Endsleigh Gardens; and
 - North Gower Street/Stephenson Way.
- 6.6.387 The results from the junctions above indicate that these junctions operate with spare capacity on all approach arms (i.e. with a ratio of flow to capacity (RFC) less than 0.85), in all the modelled time periods for the scenarios assessed.

Junction performance 2041

- 6.6.388 As for 2026, the junctions within close proximity to Euston station, as well as any new junction that form part of the Proposed Scheme have been modelled. A summary of the other junction assessed has also been provided.

Euston Circus

- 6.6.389 Table 6-182 presents the results of the modelling undertaken for Euston Circus. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.390 The results show Euston Circus is forecast to operate over capacity on many approaches during the 2026 HS2 Phase One scenario during the AM peak hour. However, during the future baseline scenario, all but one approach (the left turn from Euston Road eastbound) is also forecast to be over capacity and as such, mitigation measures should be considered at this junction irrespective of the Proposed Scheme.
- 6.6.391 During the PM peak hour, three approaches to the junction are forecast to be over capacity in the 2041 HS2 Phase Two scenario. However, these approaches are forecast to be approaching capacity during the future baseline scenario. The increase in the DoS on queueing on these approaches is associated with the additional taxi movements to, and from, the new taxi facility on Cobourg Street which will be accessible from A400 Hampstead Road.

Table 6-182: Euston Circus modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Right	655	96%	25	628	104%	42	444	88%	15	652	109%	49
	Left, ahead	642	122%	78	753	137%	127	226	64%	6	410	91%	15
A501 Euston Road east	Ahead	102	60%	3	82	53%	3	96	51%	3	77	51%	3
A400 Tottenham Court Road	Left, ahead, right	1,142	116%	111	1,270	128%	169	1,269	90%	36	1,349	108%	94
A501 Euston Road south	Left	237	61%	6	447	121%	55	309	77%	9	321	87%	11
	Ahead	167	33%	4	199	41%	5	398	76%	11	419	87%	14
	Right	579	122%	71	575	126%	80	430	87%	14	464	102%	26

A501 Euston Road/A400 Gower Street

- 6.6.392 Table 6-183 presents the results of the modelling undertaken for the junction of A501 Euston Road with A400 Gower Street. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds. The junction layout is shown in Figure 6-175.
- 6.6.393 The results show that the junction of A501 Euston Road with A400 Gower Street is forecast to be over capacity, during the AM peak hour, for future baseline with HS2 Phase Two scenarios. As the junction is forecast to be over-capacity during the future baseline scenario, mitigation should be considered regardless of the Proposed Scheme.
- 6.6.394 During the PM peak hour, the junction is forecast to operate within capacity on all approached during the future baseline and HS2 Phase Two scenarios. While the A501 Euston Road east left turn and A501 Euston Road west right turn approached have DoS values of 99% and 97% respectively during the HS2 Phase Two scenario, the level of queueing predicted can be accommodated within the available link length.

Table 6-183: A501 Euston Road/A400 Gower Street modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A501 Euston Road east	Left	585	116%	54	602	130%	88	480	78%	4	595	99%	27
	Left, ahead	158	54%	5	145	47%	2	148	33%	14	124	28%	3
A501 Euston Road west	Right	1,444	104%	65	1,513	106%	73	730	76%	17	946	97%	29

A501 Euston Road/bus station entrance

- 6.6.395 Table 6-184 presents the results of the modelling undertaken for the new junction of A501 Euston Road with the bus station entrance. The layout of the junction can be seen in Figure 6-176. Gordon Street has also been included in the modelling of this junction although this will only be for use by cyclists.
- 6.6.396 The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds. It should be noted that as this junction forms part of the Proposed Scheme, no future baseline results are presented.
- 6.6.397 The results show that the junction of A501 Euston Road with the bus station is forecast to operate within modelled theoretical capacity on all approaches during the AM and PM peak hours for the HS2 Phase Two scenario. The largest predicted DoS of 82% is predicted on the A501 Euston Road east approach to the junction during the PM peak hour. However, the queue can be accommodated within the available link length. The queues predicted on the A501 Euston Road west approach to the junction can also be accommodated within the available link length.

Table 6-184: A501 Euston Road/bus station modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2041 'with HS2'			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ
Euston bus station	Left	60	29%	2	60	40%	2
	Right	169	82%	6	66	44%	2
A501 Euston Road east	Ahead	1,120	81%	6	1,579	81%	6
	Right	168	66%	22	168	79%	29
Gordon Street	Ahead	38	16%	1	27	14%	1
A501 Euston Road west	Ahead	1,374	53%	9	1,312	80%	17
	Left, ahead	493	70%	30	774	64%	23

A501 Euston Road/A4200 Upper Woburn Place/Euston Square

- 6.6.398 Table 6-185 presents the results of the modelling undertaken for the junction of A501 Euston Road with A4200 Upper Woburn Place and Euston Square for the HS2 Phase One scenario. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.

- 6.6.399 The results show that the junction of A501 Euston Road with the A4200 Upper Woburn Place and Euston Square is forecast to be at or approaching modelled theoretical capacity during the AM and PM peak hours for the HS2 Phase Two scenario. The largest predicted DoS of 100% is predicted on the A4200 Upper Woburn Place approach to the junction during the PM peak hour with a queue of 32 PCU. This is directly related to the increase in north to south movements due to the closure of Gordon Street.
- 6.6.400 The queues predicted on the A501 Euston Road east and west approaches to the junction can also be accommodated within the available link length.

Table 6-185: A501 Euston Road/A4200 Upper Woburn Place/Euston Square modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
Euston Square	Ahead	430	70%	5	424	75%	6	293	35%	3	478	62%	7
A501 Euston Road east	Ahead	848	66%	16	898	74%	24	848	83%	23	1,051	89%	29
	Left, ahead	530	81%	13	584	95%	22	465	88%	15	526	88%	15
Upper Woburn Place	Left, ahead	475	83%	14	463	91%	16	730	95%	26	642	94%	23
	Ahead	70	25%	2	92	42%	3	62	14%	1	109	30%	3
A501 Euston Road west	Right	281	82%	8	418	95%	16	269	88%	9	294	82%	27
	Ahead	1,268	52%	9	1,417	58%	13	1,601	77%	22	1,741	92%	11

A501 Euston Road/Churchway/Dukes Road

- 6.6.401 Table 6-186 presents the results of the modelling undertaken for the junction of A501 Euston Road with Churchway and Dukes Road. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.402 The results show that the junction of A501 Euston Road with Churchway and Dukes Road is forecast to be approaching capacity during the PM peak hour, for the HS2 Phase Two scenario. The largest predicted DoS of 91% is predicted on the Churchway and A501 Euston Road east (left and ahead movements) approaches to the junction during the PM peak hour with queues of 12 and 18 PCU respectively. The queues can be accommodated within the available link length. The queues predicted on the A501 Euston Road west approach to the junction can also be accommodated within the available link length.

Table 6-186: A501 Euston Road/Churchway/Dukes Road modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
Churchway	Left, ahead, right	253	76%	8	285	77%	9	253	80%	9	303	91%	12
A501 Euston Road east	Ahead, right	429	77%	12	106	26%	3	337	82%	11	133	45%	2
	Left, ahead	583	48%	2	1,009	80%	18	689	55%	7	1,183	91%	19
	Ahead	449	36%	1	611	50%	2	413	32%	2	442	35%	5
Dukes Road	Left, ahead, right	30	9%	1	35	9%	1	30	9%	1	30	9%	1
A501 Euston Road west	Left, ahead	1,274	76%	29	1,424	61%	12	1,601	83%	29	1,747	73%	20

A4200 Eversholt Street/Grafton Place/Euston bus station

- 6.6.403 Table 6-187 presents the results of the modelling undertaken for the junction of A4200 Eversholt Street with Grafton Place and Euston bus station. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.404 The results show that the junction of A4200 Eversholt Street with Grafton Place and Euston bus station is forecast to be approaching capacity during the AM peak hour for the HS2 Phase One scenario. However, the queues predicted at the junction can be accommodated within the available link length.
- 6.6.405 During the PM peak hour, the highest DoS predicted is 85% on the Grafton Place approach to the junction. The predicted queue on this link is 10 PCU which will be accommodated within the available link length.

Table 6-187: A4200 Eversholt Street/Grafton Place/Euston bus station modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Left, ahead	396	82%	12	492	94%	19	338	62%	8	464	82%	14
Grafton Place	Left, right	183	77%	6	311	92%	12	186	80%	7	283	85%	10
Euston Square	Ahead, right	455	67%	2	412	76%	5	605	83%	10	424	76%	8
Euston bus station	Left, ahead, right	257	83%	9	242	88%	9	213	83%	8	320	82%	7

A4200 Eversholt Street/A400 Oakley Square/Lidlington Place

- 6.6.406 Table 6-188 presents the results of the modelling undertaken for A4200 Eversholt Street/Oakley Square/Lidlington Place. The modelling has been undertaken using LINSIG and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 72 seconds.
- 6.6.407 The results show that, during the AM peak hour of the future baseline scenarios, the approaches to the junction along A400 Oakley Square (ahead movement) and A4200 Eversholt Street from the south are forecast to be over capacity. For the 2041 HS2 Phase Two scenario, one further approach along A400 Oakley Square is also forecast to be over capacity. However, on the two approaches that are forecast to be over capacity during the future baseline scenarios, the DoS and MMQ reduces showing an overall improvement in the operation of the junction in the 2041 HS2 Phase Two scenario with a reduction in the DoS.
- 6.6.408 The junction is forecast to operate within practical capacity during the PM peak hour for future baseline and HS2 Phase Two scenarios.
- 6.6.409 As for 2026, further analysis has shown that if the cycle time is increased from 72 seconds (which it currently operates at) to 96 seconds, the junctions would operate within theoretical capacity on all approaches to the junction during the AM and PM peak hours.

Table 6-188: A4200 Eversholt Street/A400 Oakley Square/Lidlington Place modelling results -2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Right, ahead	235	62%	5	185	62%	4	219	39%	4	260	42%	4
A400 Oakley Square	Ahead, left	563	98%	20	534	102%	25	414	79%	9	378	80%	9
	Ahead	593	103%	30	535	102%	25	415	79%	9	378	80%	9
	Right	10	2%	0	10	2%	0	6	1%	0	6	1%	0
A4200 Eversholt Street south	Left, ahead	646	129%	91	648	118%	67	458	83%	11	517	86%	13

A400 Hampstead Road/Drummond Street

- 6.6.410 Table 6-18g presents the results of the modelling undertaken for the junction of A400 Hampstead Road with Drummond Street. The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.411 The results show that the junction of A400 Hampstead Road with Drummond Street is forecast to operate with sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase Two scenario. The queues predicted at the junction can be accommodated within the available link length.

Table 6-189: A400 Hampstead Road/Drummond Street modelling results -2041

Approach	Movement	AM peak (08:00-09:00)						PM peak (17:00-18:00)					
		2041 baseline			2041 'with HS2'			2041 baseline			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Left, ahead	1,048	90%	28	768	64%	13	485	45%	8	536	47%	8
	Ahead	244	27%	4	768	82%	19	205	25%	3	675	77%	16
Drummond Street east	Left, ahead, right	242	84%	9	179	68%	5	161	44%	4	223	73%	7
A400 Hampstead Road south	Left, ahead	593	27%	6	868	34%	13	613	34%	9	787	39%	9
Drummond Street west	Right	113	40%	3	186	77%	6	142	40%	4	160	54%	4

A400 Hampstead Road/Granby Terrace/Harrington Square

- 6.6.412 Table 6-190 presents the results of the modelling undertaken for the junction of A400 Hampstead Road with Granby Terrace and Harrington Square. The junction layout can be seen in Figure 6-177.
- 6.6.413 The modelling has been undertaken using LINSIG and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.
- 6.6.414 It should be noted that, as this new junction layout forms part of the Proposed Scheme, no future baseline results are presented.

Table 6-190: A400 Hampstead Road/Granby Terrace/Harrington Square modelling results - 2041

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2041 'with HS2'			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Left	286	64%	11	351	45%	7
	Left	513	36%	5	362	44%	7
A400 Hampstead Road south	Ahead	73	9%	1	127	16%	2
	Ahead	320	40%	6	559	69%	13
	Ahead	211	26%	4	369	46%	7
Granby Terrace	Left	94	56%	3	102	60%	3
	Left, right	94	56%	3	102	60%	3
Mornington Crescent	Left	24	6%	0	41	13%	1
Harrington Square	Right	172	37%	4	183	39%	4

- 6.6.415 The results show that the junction of A400 Hampstead Road with Granby Terrace and Harrington Square is forecast to operate with sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase Two scenario. The queues predicted at the junction can also be accommodated within the available link length.

A4200 Eversholt Street/northern bus standing area

- 6.6.416 Table 6-191 presents the results of the modelling undertaken for the junction of A4200 Eversholt Street with the northern bus standing area. The junction layout can be seen in Figure 6-178.

6.6.417 As for 2026, Polygon Road has also been included in the model given its proximity to the northern bus standing area. While this is a give-way junction, the modelling has been undertaken using TRANSYT (as part of the wider A501 Euston Road model) and the results are presented in terms of the DoS and MMQ (in PCU).

6.6.418 It should be noted that as this new junction forms part of the Proposed Scheme, no future baseline results are presented.

Table 6-191: A4200 Eversholt Street/Northern Bus Standing Area/Polygon Road modelling results - 2026

Approach	Movement	AM peak (08:00-09:00)			PM peak (17:00-18:00)		
		2041 'with HS2'			2041 'with HS2'		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A4200 Eversholt Street north	Left	537	30%	0	551	31%	0
Polygon Road	Left	114	26%	0	107	25%	0
A4200 Eversholt Street south	Ahead	609	36%	0	611	34%	0
Northern Bus Standing Area	Ahead	58	13%	0	58	14%	0

6.6.419 The results show that the junction of A4200 Eversholt Street with the northern bus standing area and Polygon Road is forecast to operate with sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase Two scenario. No queueing has been predicted.

A400 Hampstead Road/Robert Street/Cobourg Street

6.6.420 Table 6-192 presents the results of the modelling undertaken for A400 Hampstead Road with Robert Street and Cobourg Street. The junction layout can be seen in Figure 6-179.

6.6.421 The modelling has been undertaken using TRANSYT and the results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled at a cycle time of 96 seconds.

6.6.422 It should be noted that as this new junction forms part of the Proposed Scheme, no future baseline results are presented.

Table 6-192: A400 Hampstead Road/Robert Street/Cobourg Street modelling results - 2041

Approach	Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
A400 Hampstead Road north	Ahead	544	57%	10	499	53%	9
	Ahead ,right	197	21%	3	147	16%	1

Approach	Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		2026 with HS2			2026 with HS2		
		Flow	DoS	MMQ	Flow	DoS	MMQ
Cobourg Street	Left	599	47%	12	542	41%	11
	Ahead, right	32	21%	1	110	65%	4
A400 Hampstead Road south	Left, ahead	810	46%	14	905	53%	17
Robert Street	Left	10	7%	0	10	6%	0
A400 Hampstead Road north (at Varndell Street)	Left	652	61%	12	342	32%	5
	Ahead	348	16%	4	535	25%	7
A400 Hampstead Road south (at Varndell Street)	Ahead	423	40%	2	750	70%	14
	Right	354	65%	10	318	59%	9

- 6.6.423 The results show that the junction of A400Hampstead Road with Robert Street and Cobourg Street is forecast to operate with sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase Two scenario. The predicted level of queueing can be accommodated within the available link length.

Other junctions

- 6.6.424 A series of other signalised junctions have also been modelled along the A501 Euston Road and A400 Hampstead Road corridors. The results of these models show that spare capacity will be available at all junctions with the HS2 Phase Two scenario, with the exception of the junction of A501 Euston Road with A5202 Pancras Road. At this junction the right turn from A501 Euston Road to A5202 Pancras Road experiences a DoS in excess of 100%. However, the DoS is also in excess of 100% for the future baseline scenario and, as such, mitigation measures should be considered irrespective of the Proposed Scheme.
- 6.6.425 Further details on the additional modelling undertaken is given below.
- 6.6.426 Other minor junctions in the vicinity of the proposed scheme have been modelled using Junctions 8.
- 6.6.427 The junctions that are located close to the station that could be affected by any increase or rerouted traffic are the following junctions:
- Drummond Street/North Gower Street;
 - Upper Woburn Place/Endsleigh Gardens; and
 - North Gower Street/Stephenson Way.

- 6.6.428 The results from the modelling of these junctions, excluding Drummond Street with North Gower Street, indicate that they will operate with spare capacity on all approach arms, in all the modelled time periods for the scenarios assessed.

Accidents and safety

- 6.6.429 Accident data for a 36 month period from April 2009 to March 2012 has been reviewed. The baseline safety assessments identified a number of locations at which there have been nine or more accidents (which is defined as a cluster of accidents) over a three year period to the end of March 2012. The baseline safety assessment includes this analysis.
- 6.6.430 An increase in flows on roads and through junctions could bring a corresponding increase in the risk of an accident occurring. When the Proposed Scheme is in operation during 2026 and 2041, there would be an increase in the risk of accidents, as a result of an anticipated increase in traffic flows, by at least 30% during the operational year.
- 6.6.431 The baseline safety assessments identified a number of locations at which there have been nine or more accidents over the last three year period. Table 6-193 shows the locations at which predicted daily traffic flows are forecast to increase by 30% or more between 2012 and 2026, and between 2012 and 2041.

Table 6-193: Junctions with a 30% change in daily traffic flows and more than nine accidents

Location	No. of accidents - April 2009 - March 2012
A500 Euston Road/B504 Judd Street/Midland Road	24 (21 slight, 3 serious)
A400 Hampstead Road/Robert Street	21 (19 slight, 2 serious)
A501 Euston Road/Churchway	15 (13 slight, 2 serious)
A501 Euston Road/A400 Tottenham Court Road/A400 Hampstead Road	15 (13 slight, 2 serious)
A400 Hampstead Road/Drummond Street	15 (13 slight, 2 serious)
Albany Street	12 (10 slight, 2 serious)

Equestrian

- 6.6.432 There are no equestrian routes within the study area for this CFA. Therefore there will be no impact on equestrian routes.

Waterways and canals

- 6.6.433 There are no canals or waterways in within the Euston - Station and Approach area that will be affected by the Proposed Scheme. Therefore there will be no operational impact on waterways and canals.

Other mitigation measures

- 6.6.434 The Proposed Scheme has been designed to mitigate the impacts of the demand from HS2 Phase One in 2026. The demand from HS2 Phase Two in 2041 and beyond for the station has also been assessed and the design developed to accommodate the forecast flows.
- 6.6.435 In addition to the Proposed Scheme, other mitigation measures which may be required are described below. These will be developed in further consultation with the appropriate stakeholders.
- 6.6.436 Changes in traffic flows will lead to an increase in delays to vehicle occupants at a number of junctions in 2026 and 2041. However, most signalised junctions in central London are under adaptive control which will optimise the signal stages in real time. This means that many of those junctions will be mitigated through adaptive control, although this is most effective where there is no net increase in traffic through the junction.
- 6.6.437 Change in traffic flows are forecast to result in certain junctions operating over capacity in the future baseline and with HS2 in operation. The future operation of these junctions would be affected by planned but not approved schemes such as Tottenham Court Road 2-way scheme. Therefore any mitigation measures required at these locations would need to be co-ordinated and progressed by LBC and TfL with HS2.
- 6.6.438 A reduction of movement through residential areas could be achieved by supporting LBCs aspirations for 20mph zone and associated local traffic calming.
- 6.6.439 A station travel plan will be developed as a tool for improving access to and from Euston station.
- The scope of the travel plan will include:
 - access and egress to the station for passenger travel;
 - employee travel, including rail staff and others working on the site such as retail staff, security and policing, and cleansing contractors; and
 - servicing and maintenance including deliveries.
 - The objectives of the travel plan can be summarised as:
 - to encourage access by walking, cycling and public transport;

- to monitor facilities and infrastructure that supports access by walking, cycling and public transport within the station site and its surrounding area;
- to manage taxi travel to the site by providing and monitoring dedicated and controlled facilities for pick up and drop off; and
- to work in partnership with the local authority and other stakeholders to develop measures and promotional strategies to encourage sustainable travel.

6.6.440 Where footways have been identified as being impacted by the operation of the Proposed Scheme, alternative routes have been identified, and appropriate signage will be provided to assist way-finding as part of the Proposed Scheme i.e. Legible London.

6.6.441 The rationalisation of street furniture could help to improve pedestrian comfort on the street network surrounding Euston station in collaboration with LBC and TfL.

6.6.442 A review pedestrian crossing timings and signal equipment could facilitate improved area connectivity and permeability in collaboration with LBC and TfL.

Junction performance at other junctions

6.6.443 A series of other signalised junctions have also been modelled along the A501 Euston Road and A400 Hampstead Road corridors. The results of these models show that spare capacity will be available at all junctions in the future baseline and with the HS2 Phase One and Phase Two scenarios, with the exception of the junction of A501 Euston Road with A5202 Pancras Road. At this junction the right turn from A501 Euston Road (westbound) to A5202 Pancras Road experiences a DoS in excess of 100% in the case of the future baseline plus both HS2 Phase One and HS2 Phase Two. However, the DoS is also in excess of 100% for the future baseline scenario and, as such, mitigation measures should be considered irrespective of the Proposed Scheme.

6.6.444 Other minor junctions in the vicinity of the proposed scheme have been modelled using the priority junction (and roundabout) modelling software, Junctions 8.

6.6.445 The priority junctions that are located close to the station that could be affected by any increase or rerouted traffic are the following junctions:

- Drummond Street/North Gower Street;
- Upper Woburn Place/Endsleigh Gardens; and
- North Gower Street/Stephenson Way.

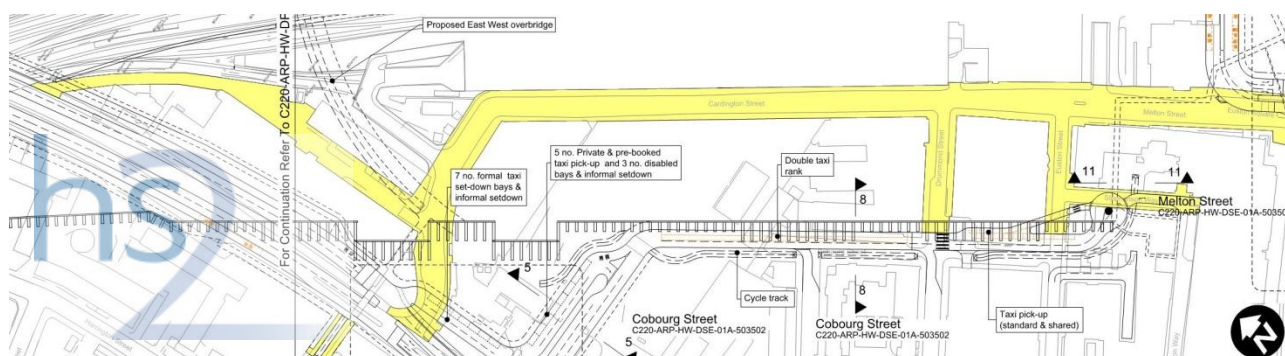
6.6.446 The results from the junctions above indicate that these junctions operate with spare capacity on all approach arms (i.e. with a ratio of flow to capacity (RFC) less than 0.85), in all the modelled time periods for the future baseline plus HS2 Phase One. With the exception of the junction of Drummond Street and Gower Street, the same junctions operate with spare capacity on all approach arms in all the modelled time periods for the future baseline plus HS2 Phase One.

6.6.447 Further details on the additional modelling undertaken follows below.

Drummond Street/Cobourg Street

6.6.448 A new junction between Cobourg Street and Drummond Street will be formed as part of the Proposed Scheme. The existing Cobourg Street is to be fully reconstructed and extended. The primary function of 'new' Cobourg Street is a passenger set-down and pick-up facility for the station. This is to include a taxi rank and taxi pick-up facilities. Drummond Street is to be connected to 'new' Cobourg Street via a left turn only. This will allow one-way access to aid in servicing existing buildings. The junction layout can be seen in Figure 6-180.

Figure 6-180: Cobourg Street layout



6.6.449 Table 6-194 presents the results of the modelling completed for Drummond Street/Cobourg Street. The modelling has been undertaken using Junctions 8 and the results are presented in terms of the RFC and MMQ (in PCU).

Table 6-194: Drummond Street/Cobourg Street 2026 and 2041 modelling results - RFC and MMQ

Peak	Approach	Movement	2026 with HS2		2041 with HS2	
			RFC	MMQ	RFC	MMQ
AM peak hour	Cobourg Street north	Ahead	3%	0	0	0
	Drummond Street	Left	6%	0	6%	0
PM peak hour	Cobourg Street north	Ahead	-	-	-	-
	Drummond Street	Left	12%	0	12%	0

- 6.6.450 The results forecast that the new junction of Drummond Street with Cobourg Street will have sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase One and Phase Two scenarios. No queuing has been predicted.

Starcross Street/Cobourg Street

- 6.6.451 The existing priority junction of Starcross Street and Cobourg Street is to be reconfigured as part of the Proposed Scheme. The existing Cobourg Street is to be fully reconstructed and extended. Starcross Street is to be connected to 'new' Cobourg Street via a left turn only. This will allow one-way access to aid in servicing existing buildings.
- 6.6.452 Table 6-195 presents the results of the modelling completed for Starcross Street with Cobourg Street. The modelling has been undertaken using Junctions 8 and the results are presented in terms of RFC and MMQ (in PCU's).
- 6.6.453 It should be noted that as this new junction forms part the proposed Scheme, no future baseline results are presented.

Table 6-195: Starcross Street/Cobourg Street 2026 and 2041 modelling results - RFC and MMQ

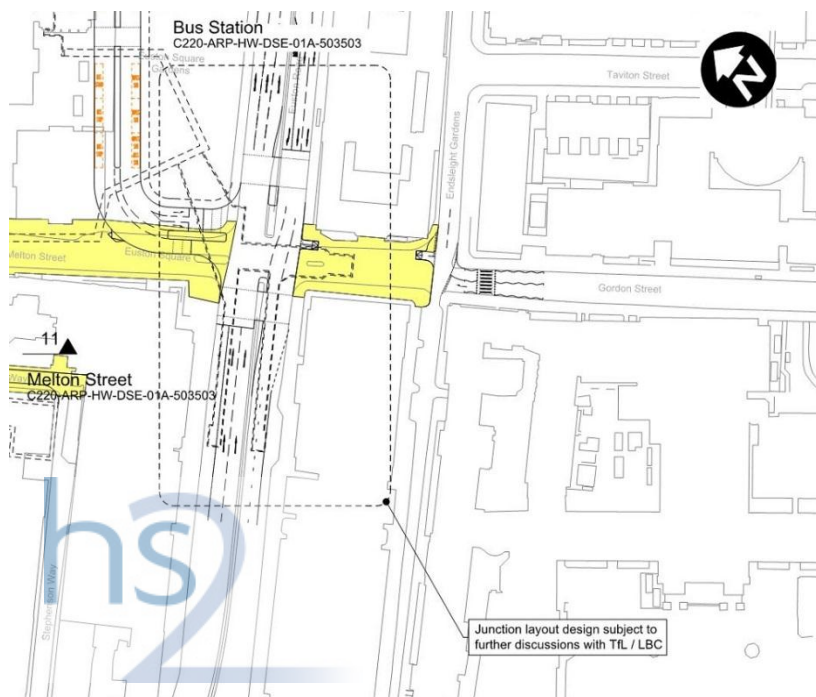
Peak	Approach	Movement	2026 with HS2		2041 with HS2	
			RFC	MMQ	RFC	MMQ
AM peak hour	Cobourg Street north	Ahead	3%	0	3	0
	Starcross Street	Left	5%	0	5%	0
PM peak hour	Cobourg Street north	Ahead	-	-	-	-
	Starcross Street	Left	10%	0	11%	0

- 6.6.454 The results forecast that the new junction of Starcross Street with Cobourg Street will have sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase One and Phase Two scenarios. No queuing has been predicted.

Gordon Street/Gower Place/Endsleigh Gardens

- 6.6.455 The existing crossroads junction of Gordon Street/Gower Place and Endsleigh Gardens is to be reconfigured as part of the Proposed Scheme. This is a result of the closure to vehicles of the section of Gordon Street between Euston Road and Endsleigh Gardens. The junction will comprise a three arm junction and the layout can be seen in Figure 6-181.

Figure 6-181: Gordon Street/Gower Place/Endsleigh Gardens layout



6.6.457 Table 6-196 presents the results of the modelling completed for Drummond Street with Cobourg Street. The modelling has been undertaken using Junctions 8 and the results are presented in terms of the RFC and MMQ (in PCU).

6.6.458 It should be noted that as this new junction forms part of the proposed Scheme, no future baseline results are presented.

Table 6-196: Gordon Street/Gower Place/Endsleigh Gardens 2026 and 2041 modelling results - RFC and MMQ

Peak	Approach	Movement	2026 with HS2		2041 with HS2	
			RFC	MMQ	RFC	MMQ
AM peak hour	Gordon Street	Left, right	15%	0	16%	0
PM peak hour	Gordon Street	Left, right	15%	0	5%	0

6.6.459 The results indicate that the reconfigured junction of Gordon Street with Endsleigh Gardens and Gower Place have sufficient spare capacity on all approaches to the junction during the AM and PM peak hour for the HS2 Phase One and Phase Two scenarios. No queuing has been predicted.

Junctions east of Churchway

6.6.460 A series of junction on A501 Euston Road have also been modelled as part of the A501 Euston Road TRANSYT. These junctions are:

- A501 Euston Road/Mabledon Place;
- A501 Euston Road/Ossulston Street;
- A501 Euston Road/Midland Road/B504 Judd Street;
- A501 Euston Road/Argyle Road;
- A501 Euston Road/A5202 Pancras Road/Belgrove Street; and
- A501 Euston Road/A5203 York Way.

6.6.461 Table 6-197 and Table 6-198 provide the modelling results of these junctions for the AM and PM peak hours. The results are presented in terms of the DoS and MMQ (in PCU). Each junction has a cycle time of 96 seconds.

Table 6-197: A501 Euston Road signalised junctions modelling results - DoS

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak	A501 Euston Road/Mabledon Place	A501 Euston Road east	Ahead	43%	43%	40%	38%	44%
			Left, ahead	46%	44%	40%	45%	46%
		Mabledon Place	Right	20%	52%	61%	47%	48%
		A501 Euston Road west	Ahead	79%	66%	64%	66%	64%
	A501 Euston Road/Ossulston Street	Ossulston Street	Left	13%	42%	53%	36%	60%
		A501 Euston Road east	Ahead	46%	44%	42%	39%	46%
			Ahead	49%	46%	42%	47%	48%
		A501 Euston Road west	Left, ahead	75%	65%	64%	64%	65%
	A501 Euston Road/Midland Road/B504 Judd Street	Midland Road	Left, ahead	60%	66%	68%	65%	70%
			Right	77%	87%	83%	83%	86%
		A501 Euston Road east	Left, ahead	69%	73%	69%	74%	78%
		B504 Judd Street	Left	17%	24%	23%	27%	27%
		A501 Euston Road west	Right	60%	48%	37%	31%	28%
			Ahead	78%	84%	80%	79%	85%
			Ahead	40%	40%	41%	39%	44%
	A501 Euston Road/Argyle Road	A501 Euston Road east	Ahead	57%	50%	47%	51%	51%
		Argyle Road	Left	7%	16%	15%	15%	15%
	A501 Euston Road/A5202 Pancras Road	A5202 Pancras Road	Left, ahead, right	49%	87%	75%	82%	73%

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		A501 Euston Road east	Right	83%	90%	59%	89%	99%
			Ahead	76%	70%	69%	71%	71%
		A501 Euston Road west	Ahead	87%	77%	92%	78%	95%
			Left	73%	64%	83%	61%	87%
			Right	4%	4%	7%	6%	7%
	A501 Euston Road/A5203 York Way	A501 Gray's Inn Road	Ahead	73%	76%	79%	68%	69%
		A501 Euston Road	Left, ahead	69%	80%	83%	77%	80%
			Left, ahead	22%	25%	29%	24%	26%
PM peak	A501 Euston Road/Mabledon Place	A501 Euston Road east	Ahead	54%	42%	50%	38%	53%
			Left, ahead	38%	42%	36%	41%	39%
		Mabledon Place	Right	25%	88%	48%	60%	90%
		A501 Euston Road west	Ahead	87%	85%	83%	79%	86%
	A501 Euston Road/Ossulston Street	Ossulston Street	Left	12%	47%	56%	95%	51%
		A501 Euston Road east	Ahead	57%	49%	52%	39%	55%
			Ahead	40%	44%	37%	43%	41%
		A501 Euston Road west	Left, ahead	81%	93%	84%	88%	91%
	A501 Euston Road/Midland Road/B504 Judd Street	Midland Road	Left, ahead	51%	73%	96%	68%	95%
			Right	79%	85%	95%	85%	98%
		A501 Euston Road east	Left, ahead	70%	72%	66%	66%	70%
		B504 Judd Street	Left	42%	27%	40%	29%	52%

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		A501 Euston Road west	Right	22%	51%	57%	38%	30%
			Ahead	79%	86%	77%	86%	90%
			Ahead	49%	89%	98%	90%	91%
	A501 Euston Road/Argyle Road	A501 Euston Road east	Ahead	54%	47%	47%	43%	46%
		Argyle Road	Left	13%	54%	16%	46%	18%
	A501 Euston Road/A5202 Pancras Road	A5202 Pancras Road	Left, ahead, right	75%	97%	93%	107%	103%
		A501 Euston Road east	Right	76%	113%	113%	109%	105%
			Ahead	74%	65%	66%	59%	66%
		A501 Euston Road west	Ahead	83%	98%	97%	98%	98%
			Left	87%	76%	89%	92%	92%
			Right	6%	9%	6%	6%	10%
	A501 Euston Road/A5203 York Way	A501 Gray's Inn Road	Ahead	105%	91%	88%	86%	92%
		A501 Euston Road	Left, ahead	72%	93%	91%	91%	94%
			Left, ahead	22%	24%	26%	25%	26%

Table 6-198: A501 Euston Road signalised junctions modelling results - MMQ

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak	A501 Euston Road/Mabledon Place	A501 Euston Road east	Ahead	6	7	6	5	8
			Left, ahead	2	6	2	2	2
		Mabledon Place	Right	25	6	5	5	5
		A501 Euston Road west	Ahead	3	19	12	21	5
	A501 Euston Road/Ossulston Street	Ossulston Street	Left	1	2	2	1	2
		A501 Euston Road east	Ahead	8	8	7	6	7
			Ahead	3	5	3	3	3
		A501 Euston Road west	Left, ahead	4	6	7	6	8
	A501 Euston Road/Midland Road/B504 Judd Street	Midland Road	Left, ahead	8	9	9	9	9
			Right	14	17	16	15	19
		A501 Euston Road east	Left, ahead	14	19	18	19	23
		B504 Judd Street	Left	1	2	2	2	2
		A501 Euston Road west	Right	2	2	1	1	1
			Ahead	20	29	31	28	32
			Ahead	2	4	2	4	2
	A501 Euston Road/Argyle Road	A501 Euston Road east	Ahead	11	8	6	9	12
		Argyle Road	Left	1	1	1	1	1
	A501 Euston Road/A5202 Pancras Road	A5202 Pancras Road	Left, ahead, right	8	12	11	12	10
		A501 Euston Road east	Right	7	11	7	11	21

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		A501 Euston Road west	Ahead	15	14	13	14	15
			Ahead	24	10	24	10	34
			Left	7	5	8	5	11
			Right	0	0	0	0	0
	A501 Euston Road/A5203 York Way	A501 Gray's Inn Road	Ahead	13	12	17	11	11
		A501 Euston Road	Left, ahead	5	10	10	7	11
			Left, ahead	0	1	0	1	0
PM peak	A501 Euston Road/Mabledon Place	A501 Euston Road east	Ahead	9	2	6	13	16
			Left, ahead	2	5	1	7	6
		Mabledon Place	Right	4	15	5	6	14
		A501 Euston Road west	Ahead	24	19	28	20	28
	A501 Euston Road/Ossulston Street	Ossulston Street	Left	1	2	2	6	2
		A501 Euston Road east	Ahead	10	15	7	14	17
			Ahead	2	6	2	7	7
		A501 Euston Road west	Left, ahead	7	28	25	26	42
	A501 Euston Road/Midland Road/B504 Judd Street	Midland Road	Left, ahead	6	10	20	9	19
			Right	12	15	19	15	26
		A501 Euston Road east	Left, ahead	14	18	16	16	18
		B504 Judd Street	Left	3	2	3	2	4

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		A501 Euston Road west	Right	1	2	2	1	1
			Ahead	26	28	32	27	37
			Ahead	5	15	33	16	23
	A501 Euston Road/Argyle Road	A501 Euston Road east	Ahead	8	8	6	8	6
		Argyle Road	Left	1	3	1	2	1
	A501 Euston Road/A5202 Pancras Road	A5202 Pancras Road	Left, ahead, right	12	17	15	27	23
		A501 Euston Road east	Right	7	33	41	33	31
			Ahead	12	12	9	11	9
		A501 Euston Road west	Ahead	17	32	24	52	26
			Left	20	6	11	11	18
			Right	0	0	0	0	0
	A501 Euston Road/A5203 York Way	A501 Gray's Inn Road	Ahead	42	20	18	18	22
		A501 Euston Road	Left, ahead	16	15	20	15	27
			Left, ahead	4	1	0	1	0

A501 Euston Road/Mabledon Place

- 6.6.462 The results show that the junction of A501 with Euston Road with Mabledon Place is forecast to operate with spare capacity during the AM peak hour for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The junction is also forecast to operate within the capacity for the PM peak hour for the HS2 Phase One and HS2 Phase Two scenarios. The highest DoS recorded was during the 2041 HS2 Phase Two scenario is 90% on the approach to the junction along Mabledon Place during the PM peak hour. However, the queue of 14 PCU can be accommodated comfortably within the available link length.

A501 Euston Road/Ossulston Street

- 6.6.463 The junction of A501 with Euston Road with Ossulston Street is forecast to operate with spare capacity during the AM peak hour for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The junction is also forecast to operate within the theoretical model capacity for the PM peak hour for the HS2 Phase One and HS2 Phase Two scenarios. The level of queueing predicted can be accommodated within the available link length.

A501 Euston Road/Midland Road

- 6.6.464 The junction of A501 Euston Road with Midland Road and B504 Judd Street is forecast to operate with adequate spare capacity during the AM peak hour for 2026 HS2 Phase One scenario. The highest modelled DoS for the 2026 HS2 Phase One scenario is 83% on the approach to the junction along Midland Road (right turn lane) during the AM peak hour. The DoS is forecast to decrease from 87% during the 2026 future baseline scenario.
- 6.6.465 For the 2041 HS2 Phase Two scenario, the junction is forecast to operate with spare capacity during the AM hour. The queues on both approaches can be accommodated within the available link length.
- 6.6.466 During the PM peak hour, the junction of A501 Euston Road with Midland Road and B504 Judd Street is approaching capacity for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. For the 2026 HS2 Phase One scenario, the DoS along A501 Euston Road west is 98% with a queue of 33 PCU. This can be accommodated within the available link length. The approaches to the junction along Midland Road have a DoS of 95% and 96% for the left/ahead and right turning lanes respectively. The queues of 209 PCU and 19 PCU can be accommodated within the available link length. All increases in DoS at this junction, with the exception of Midland Road (left/ahead lane) are of the order of less than 10% when compared with the 2041 future baseline scenario.

- 6.6.467 For the 2041 HS2 Phase Two scenario, the DoS along A501 Euston Road west is 91% with a queue of 37 PCU. This can be accommodated within the available link length. The approaches to the junction along Midland Road have a DoS of 95% and 98% for the left/ahead and right turning lanes respectively. The queues of 19 PCU and 26 PCU can be accommodated within the available link length. All increases in DoS at this junction, with the exception of Midland Road (left/ahead lane) are of the order of less than 10% when compared against the future baseline scenario.

A501 Euston Road/Argyle Road

- 6.6.468 The junction of A501 Euston Road with Argyle Road operates with spare capacity for the HS2 Phase One and Phase Two scenarios.

A501 Euston Road/Pancras Road

- 6.6.469 At the junction of A501 Euston Road with A5202 Pancras Road, the approach to the junction on A501 Euston Road from the east (right turn onto Pancras Road) is forecast to be over capacity for the AM and PM peak periods during the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. However, during the 2026 future baseline scenario, the DoS on this approach is 113%, remaining at 113% for the 2026 HS2 Phase One scenario. For the 2041 future baseline scenario, the DoS on this approach is 109%. This reduces to 105% for the 2041 HS2 Phase Two scenario.

- 6.6.470 It should be noted that the left-turning traffic flows from A501 Euston Road west on to A5202 Pancras Road have been balanced with the left-turning traffic flows from A501 Euston Road to A5203 to York Way. It was found that the volume of traffic turning left from A501 Euston Road to A5202 Pancras Road was very high while the corresponding movement onto A5203 York Way was extremely low. The balancing exercise reflects a more realistic distribution of traffic.

A501 Euston Road/A5203 York Way

- 6.6.471 The junction of A501 Euston Road with A5203 York Way and Gray's Inn Road is forecast to be approaching capacity during the HS2 Phase One and Phase Two scenarios. However, the increases in DoS are very minor when compared with the future baseline scenarios. The queues can be accommodated within the available link length.

King's Cross junctions

- 6.6.472 A series of junction in the King's Cross area have also been modelled as part of the A501 Euston Road TRANSYT. These junctions are:

- A501 Euston Road/A501 Gray's Inn Road;
- A501 Euston Road/A5203 Caledonian Road;

- A501 Gray's Inn Road/Swinton Street;
- A501 Euston Road A501 Pentonville Road; and
- A201 King's Cross Road/A501 Penton Rise.

6.6.473 Table 6-199 and Table 6-200 provide the modelling results of these junctions for the AM and PM peak hours. The junctions have been modelled using TRANSYT. The results are presented in terms of the DoS and MMQ (in PCU). Each junction has a cycle time of 96 seconds.

Table 6-199: King's Cross signalised junctions modelling results - DoS

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A501 Euston Road/A501 Gray's Inn Road	A501 Gray's Inn Road	Ahead	70%	83%	80%	84%	93%
	A501 Pentonville Road/A5203 Caledonian Road	A5203 Caledonian Road	Left, ahead	62%	76%	75%	72%	74%
			Left, ahead	14%	15%	14%	11%	14%
		A501 Pentonville Road east	Left	62%	12%	16%	13%	18%
		A501 Pentonville Road west	Ahead	25%	77%	76%	75%	79%
	A501 Gray's Inn Road/King's Cross Bridge	King's Cross Bridge	Left	45%	66%	75%	75%	76%
		A501 Gray's Inn Road	Ahead	72%	74%	73%	73%	73%
			Ahead	13%	6%	6%	6%	5%
	A501 Gray's Inn Road/A501 Swinton Street	A501 Swinton Street	Right	59%	59%	61%	64%	59%
		A501 Gray's Inn Road	Ahead	31%	47%	45%	44%	54%
		Argyle Street	Left	7%	8%	37%	8%	37%
	A201 King's Cross Road/A501 Penton Rise	A501 Penton Rise	Left, ahead, right	67%	66%	65%	64%	63%
		Vernon Rise	Left	7%	13%	10%	9%	9%
		A201 King's Cross Road	Left, ahead, right	42%	68%	66%	68%	64%
PM peak hour	A501 Euston Road/A501 Gray's Inn Road	A501 Gray's Inn Road	Ahead	82%	87%	90%	83%	94%
	A501 Pentonville Road/A5203 Caledonian Road	A5203 Caledonian Road	Left, ahead	73%	65%	59%	64%	61%
			Left, ahead	21%	29%	21%	23%	23%
		A501 Pentonville Road east	Left	22%	11%	11%	13%	14%
		A501 Pentonville Road west	Ahead	49%	65%	71%	70%	74%

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
	A501 Gray's Inn Road/King's Cross Bridge	King's Cross Bridge	Left	42%	49%	49%	51%	57%
		A501 Gray's Inn Road	Ahead	98%	74%	76%	72%	80%
		Argyle Street	Ahead	12%	4%	8%	4%	4%
	A501 Gray's Inn Road/A501 Swinton Street	A501 Swinton Street	Right	64%	72%	67%	65%	70%
		A501 Gray's Inn Road	Ahead	56%	64%	66%	66%	68%
		Argyle Street	Left	8%	20%	65%	18%	67%
	A201 King's Cross Road/A501 Penton Rise	A501 Penton Rise	Left, ahead, right	88%	68%	61%	65%	652%
		Vernon Rise	Left	8%	11%	9%	11%	9%
		A201 King's Cross Road	Left, ahead, right	36%	58%	61%	63%	58%

Table 6-200: King's Cross signalised junctions modelling results - MMQ

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A501 Euston Road/A501 Gray's Inn Road	A501 Gray's Inn Road	Ahead	15	21	8	18	28
	A501 Pentonville Road/A5203 Caledonian Road	A5203 Caledonian Road	Left, ahead	19	27	20	25	19
			Left, ahead	2	2	1	1	1
		A501 Pentonville Road east	Left	5	1	1	1	1
		A501 Pentonville Road west	Ahead	2	8	19	4	22
	A501 Gray's Inn Road/King's Cross Bridge	King's Cross Bridge	Left	6	15	13	12	13

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2	
		A501 Gray's Inn Road	Ahead	18	17	16	15	15	
			Ahead	1	0	0	1	0	
	A501 Gray's Inn Road/A501 Swinton Street	A501 Swinton Street	Right	9	9	10	10	10	
		A501 Gray's Inn Road	Ahead	6	7	8	7	9	
		Argyle Street	Left	0	0	1	0	1	
	A201 King's Cross Road/A501 Penton Rise	A501 Penton Rise	Left, ahead, right	8	11	10	10	10	
		Vernon Rise	Left	0	0	0	0	0	
		A201 King's Cross Road	Left, ahead, right	8	10	10	11	10	
	PM peak hour	A501 Euston Road/A501 Gray's Inn Road	A501 Gray's Inn Road	Ahead	19	16	21	11	24
		A501 Pentonville Road/A5203 Caledonian Road	A5203 Caledonian Road	Left, ahead	18	13	12	15	13
Left, ahead				2	2	2	2	2	
A501 Pentonville Road east			Left	2	1	1	1	1	
A501 Pentonville Road west			Ahead	5	2	2	9	2	
A501 Gray's Inn Road/King's Cross Bridge		King's Cross Bridge	Left	7	5	4	6	6	
		A501 Gray's Inn Road	Ahead	32	24	20	19	21	
		Argyle Street	Ahead	1	0	1	0	0	
A501 Gray's Inn Road/A501 Swinton Street		A501 Swinton Street	Right	10	11	10	10	10	
		A501 Gray's Inn Road	Ahead	13	13	14	14	16	
		Argyle Street	Left	0	1	4	1	3	
A201 King's Cross Road/A501 Penton Rise		A501 Penton Rise	Left, ahead, right	14	10	8	9	9	

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		Vernon Rise	Left	0	0	0	0	0
		A201 King's Cross Road	Left, ahead, right	9	7	9	9	8

6.6.474 The results show that for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios, the following junctions is forecast to operate with spare capacity on all approaches to the particular junctions:

- A501 Pentonville Road with A5203 Caledonian Road;
- A501 Gray's Inn Road with King's Cross Bridge;
- A501 Gray's Inn Road with A501 Swinton Street; and
- A201 King's Cross Road with A501 Penton Rise.

6.6.475 The junction of A501 Euston Road with A501 Gray's Inn Road is forecast to operate with adequate spare capacity during the AM peak hour of the 2026 HS2 Phase One scenario. During the PM peak hour, however, the DoS on the approach to the junction along A501 Gray's Inn Road is forecast to be 90%, increased from 87% in the 2026 future baseline scenario. However, the MMQ during this period is 21 PCU which can be accommodate within the available link length.

6.6.476 During the AM peak hour of the 2041 HS2 Phase One scenario, the approach to the junction along A501 Gray's Inn Road has a DoS of 90%, an increase of 9% when compared with the 2041 future baseline scenario. The MMQ during this time period is 28 PCU which can be accommodated within the available link length. During the PM peak hour the DoS on the approach to the junction along A501 Gray's Inn Road is 94%, increased from 83% in the 2041 future baseline scenario. However, the MMQ during this period is 24 PCU which can be accommodate within the available link length.

A400 Tottenham Court Road area junctions

6.6.477 A series of junction in the A400 Tottenham Court Road area have also been modelled as part of the A501 Euston Road TRANSYT. These junctions are:

- A400 Tottenham Court Road/Warren Street Pedestrian Crossing;
- A400 Tottenham Court Road/Grafton Way;
- A400 Tottenham Court Road/Maple Street;
- A400 Gower Street/University Street (priority junction);
- A400 Gower Street pedestrian crossing; and
- A400 Gower Street/Grafton Way.

6.6.478 Table 6-201 and Table 6-202 provide the modelling results for the signalised junctions in the A400 Tottenham Court Road area for the AM and PM peak hours. The junctions have been modelled using TRANSYT. The results are presented in terms of the DoS and MMQ (in PCU). Each signalised junction has a cycle time of 96 seconds. These junctions have not been modelled for the 2012 baseline scenario and have only been modelled as they were included in the Euston Circus TRANSYT model received from TfL.

Table 6-201: A400 Tottenham Court Road junctions modelling results - DoS

Peak	Junction	Approach	Movement	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A400 Tottenham Court Road pedestrian crossing	A400 Tottenham Court Road	Ahead	40%	44%	41%	45%
	A400 Tottenham Court Road/Maple Street	A400 Tottenham Court Road	Ahead	56%	71%	58%	73%
			Ahead, right	58%	74%	59%	77%
		Maple Street	Left, ahead	66%	63%	68%	66%
	A400 Tottenham Court Road/Grafton Way	A400 Tottenham Court Road	Left, ahead	58%	60%	60%	62%
		Grafton Way	Left, ahead	45%	49%	43%	50%
	A400 Gower Street /University Street (priority)	A400 Gower Street	Ahead	38%	45%	38%	38%
			Ahead	7%	8%	7%	8%
		University Street	Right	45%	92%	46%	87%
	A400 Gower Street pedestrian crossing	A400 Gower Street	Ahead	56%	55%	57%	55%
PM peak hour	A400 Tottenham Court Road pedestrian crossing	A400 Tottenham Court Road	Ahead	46%	48%	46%	49%
	A400 Tottenham Court Road/Maple Street	A400 Tottenham Court Road	Ahead	59%	61%	60%	63%
			Ahead	60%	62%	60%	59%
		Maple Street	Left, ahead	71%	73%	71%	74%
	A400 Tottenham Court Road/Grafton Way	A400 Tottenham Court Road	Left, ahead	63%	66%	63%	65%
		Grafton Way	Left, ahead	52%	53%	52%	53%
	A400 Gower Street /University Street (priority)	A400 Gower Street	Ahead	25%	34%	24%	34%
			Ahead	9%	10%	9%	10%
		University Street	Right	44%	72%	44%	69%
	A400 Gower Street pedestrian crossing	A400 Gower Street	Ahead	44%	51%	43%	53%

Table 6-202: A400 Tottenham Court Road junctions modelling results - MMQ

Peak	Junction	Approach	Movement	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A400 Tottenham Court Road pedestrian crossing	A400 Tottenham Court Road	Ahead	6	5	6	5
	A400 Tottenham Court Road/Maple Street	A400 Tottenham Court Road	Ahead	17	22	18	22
			Ahead	9	12	9	13
		Maple Street	Left, ahead	9	10	10	11
	A400 Tottenham Court Road/Grafton Way	A400 Tottenham Court Road	Left, ahead	9	8	11	8
		Grafton Way	Left, ahead	7	6	6	6
	A400 Gower Street /University Street (priority)	A400 Gower Street	Ahead	16	25	16	12
			Ahead	0	0	0	0
		University Street	Right	7	13	7	11
	A400 Gower Street pedestrian crossing	A400 Gower Street	Ahead	23	19	23	19
PM peak hour	A400 Tottenham Court Road pedestrian crossing	A400 Tottenham Court Road	Ahead	7	6	7	6
	A400 Tottenham Court Road/Maple Street	A400 Tottenham Court Road	Ahead	18	19	18	20
			Ahead	9	10	9	9
		Maple Street	Left, ahead	1	11	11	11
	A400 Tottenham Court Road/Grafton Way	A400 Tottenham Court Road	Left, ahead	14	14	14	11
		Grafton Way	Left, ahead	8	4	8	5
	A400 Gower Street /University Street (priority)	A400 Gower Street	Ahead	16	11	2	12
			Ahead	0	0	0	0
		University Street	Right	7	8	6	7
	A400 Gower Street pedestrian crossing	A400 Gower Street	Ahead	23	14	12	20

6.6.479 The results show that all of the junctions within the A400 Tottenham Court Road area are forecast to operate with sufficient spare capacity during the AM and PM peak hours for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The level of queueing experienced can be accommodated within the available space on the relevant links.

A400 Hampstead Road/A4200 Eversholt Street/Mornington Crescent/B512 Crowndale Road/A400 Camden High Street

6.6.480 Table 6-203 and Table 6-204 provide the modelling results for the junction of the A400 Hampstead Road/A4200 Eversholt Street/Mornington Crescent/B512 Crowndale Road/A400 Camden High Street for the AM and PM peak hours. The junction has been modelled using TRANSYT. The results are presented in terms of the DoS and MMQ (in PCU). The junction has been modelled with a 72 second cycle time.

Table 6-203: A400 Hampstead Road/A4200 Eversholt Street/Mornington Crescent/B512 Crowndale Road/A400 Camden High Street modelling results - DoS

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak	B512 Crowndale Road	Left	17%	13%	2%	13%	2%
		Ahead	31%	25%	9%	25%	2%
		Right	48%	48%	50%	48%	48%
	A4200 Eversholt Street	Left, ahead	50%	50%	49%	50%	50%
	Harrington Square	Ahead	13%	11%	5%	11%	3%
	A400 Hampstead Road	Ahead	52%	52%	58%	52%	52%
	Mornington Crescent	Left	12%	23%	28%	22%	21%
	A400 Camden High Street	Ahead	16%	18%	23%	18%	18%
		Ahead	22%	22%	22%	22%	22%
PM peak	B512 Crowndale Road	Left	18%	28%	24%	28%	22%
		Ahead	24%	34%	31%	39%	32%
		Right	52%	48%	52%	52%	54%
	A4200 Eversholt Street	Left, ahead	52%	57%	52%	52%	54%
	Harrington Square	Ahead	11%	18%	13%	16%	13%
	A400 Hampstead Road	Ahead	91%	91%	91%	91%	93%
	Mornington Crescent	Left	24%	35%	50%	37%	65%
	A400 Camden High Street	Ahead	26%	28%	30%	28%	38%
		Ahead	23%	23%	23%	23%	24%

Table 6-204: A400 Hampstead Road/A4200 Eversholt Street/Mornington Crescent/B512 Crowndale Road/A400 Camden High Street junction modelling results - MMQ (PCU)

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak	B512 Crowndale Road	Left	1	1	0	1	0
		Ahead	3	3	1	3	0
		Right	5	5	5	5	5
	A4200 Eversholt Street	Left, ahead	7	7	6	7	7
	Harrington Square	Ahead	0	0	0	0	0
	A400 Hampstead Road	Ahead	4	4	5	4	4
	Mornington Crescent	Left	0	0	0	0	0
	A400 Camden High Street	Ahead	4	2	3	2	2
		Ahead	3	1	1	1	2
PM peak	B512 Crowndale Road	Left	1	2	1	2	1
		Ahead	2	4	3	4	3
		Right	5	5	5	5	6
	A4200 Eversholt Street	Left, ahead	7	7	7	7	7
	Harrington Square	Ahead	0	0	0	0	0
	A400 Hampstead Road	Ahead	14	14	14	14	15
	Mornington Crescent	Left	0	0	2	1	3
	A400 Camden High Street	Ahead	7	3	4	3	6
		Ahead	3	2	1	1	1

6.6.481 The results show that the A400 Hampstead Road (ahead) approach to the junction is approaching capacity during the PM peak hour for the HS2 Phase Two scenario. However, the queues predicted at the junction can also be accommodated within the available link length. The highest DoS predicted is 93% on the A400 Hampstead Road approach to the junction during the PM peak hour. The predicted queue on this link is 15 PCU which can be accommodated within the available link length.

6.6.482 The results indicate that the junction operates with spare capacity on all other approach arms during the AM and PM peak hours for the 2012 baseline, 2026 and 2041 future baseline and 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The DoS on all other links is well below the practical capacity threshold of 90% for signalised junctions.

A4201 Parkway/Park Village East/A4201 Gloucester Gate/Prince Albert Road

6.6.483 Table 6-205 and Table 6-206 provide the modelling results for the junction of A4201 Parkway with Park Village East, A4201 Gloucester Gate and Prince Albert Road for the AM and PM peak hours. The junction has been modelled using TRANSYT. The results are presented in terms of the DoS and MMQ, measured in PCU. The junction has been modelled at a cycle time of 88 seconds.

Table 6-205: A4201 Parkway/Park Village East/A4201 Gloucester Gate/Prince Albert Road modelling results - DoS

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	Gloucester Avenue west	Left, ahead	24%	25%	24%	25%	25%
	Oval Road	Left	21%	13%	13%	13%	13%
	Gloucester Avenue east	Ahead	50%	60%	59%	63%	63%
		Right	24%	21%	22%	21%	21%
	A503 Delancey Street	Left	55%	68%	62%	70%	68%
		Ahead	61%	74%	72%	79%	76%
		Right	1%	1%	4%	1%	1%
	A4201 Parkway	Left	22%	16%	17%	16%	17%
		Ahead	83%	74%	74%	77%	79%
	Gloucester Avenue	Left, ahead	30%	49%	33%	52%	52%
	A4201 Gloucester Gate	Left, ahead, right	74%	84%	82%	87%	87%
	Prince Albert Road	Left, ahead, right	80%	86%	84%	88%	88%
	A4201 Parkway	Ahead	24%	36%	32%	38%	38%
		Right	98%	65%	53%	62%	62%
PM peak hour	Gloucester Avenue west	Left, ahead	19%	20%	20%	21%	20%
	Oval Road	Left	8%	10%	10%	10%	10%
	Gloucester Avenue east	Ahead	67%	64%	64%	64%	63%
		Right	14%	10%	10%	11%	9%
	A503 Delancey Street	Left	48%	50%	52%	52%	52%
		Ahead	84%	84%	83%	90%	88%
		Right	1%	2%	5%	2%	5%
	A4201 Parkway	Left	12%	8%	9%	7%	6%
		Ahead	95%	82%	83%	91%	89%
	Gloucester Avenue	Left, ahead	17%	29%	30%	35%	32%
	A4201 Gloucester Gate	Left, ahead, right	77%	69%	69%	81%	81%

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
	Prince Albert Road	Left, ahead, right	70%	84%	78%	92%	90%
	A4201 Parkway	Ahead	20%	17%	17%	17%	17%
		Right	87%	75%	72%	93%	86%

Table 6-206: A4201 Parkway/Park Village East/A4201 Gloucester Gate/Prince Albert Road modelling results - MMQ (PCU)

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	Gloucester Avenue west	Left, ahead	3	3	3	3	3
	Oval Road	Left	1	1	0	1	1
	Gloucester Avenue east	Ahead	10	12	12	14	14
		Right	2	2	2	2	2
	A503 Delancey Street	Left	7	9	8	10	10
		Ahead	9	12	11	13	13
		Right	0	0	0	0	0
	A4201 Parkway	Left	3	1	1	1	1
		Ahead	18	7	6	10	10
	Gloucester Avenue	Left, ahead	3	3	2	3	3
	A4201 Gloucester Gate	Left, ahead, right	15	19	18	21	21
	Prince Albert Road	Left, ahead, right	18	20	18	20	20
	A4201 Parkway	Ahead	4	8	7	9	9
		Right	11	4	3	4	4
PM peak hour	Gloucester Avenue west	Left, ahead	2	3	3	3	3
	Oval Road	Left	0	1	1	1	1
	Gloucester Avenue east	Ahead	15	2	14	2	2
		Right	1	0	1	0	0
	A503 Delancey Street	Left	6	6	6	6	6
		Ahead	15	14	14	16	15
		Right	0	0	0	0	1
	A4201 Parkway	Left	1	0	0	0	0
		Ahead	21	19	17	22	15
	Gloucester Avenue	Left, ahead	2	2	2	2	2
	A4201 Gloucester Gate	Left, ahead, right	17	17	17	20	22

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
	Prince Albert Road	Left, ahead, right	14	19	14	23	19
	A4201 Parkway	Ahead	5	3	4	4	4
		Right	7	5	6	8	12

6.6.484 The results of the modelling show that the A503 Delancey Street arm of the junction (for the ahead movement) is forecast to operate above capacity for the 2041 future baseline scenario for the PM peak hour. The model predicts a DoS of 90%, however the forecast queue for this movement shows that it can be accommodated within the available link length.

6.6.485 The A4201 Parkway approach to the junction with Delancey Street (for the ahead movement) is predicted to operate at 91% DoS with a forecast queue of 22 PCU in the 2041 future baseline scenario for the PM peak hour. The predicted queue for this movement can be accommodated within the available link length. The movement is forecast to operate within capacity for all other future base and with 2041 HS2 Phase Two scenarios for the AM and PM peak hours.

6.6.486 The Prince Albert Road approach (all movements) is forecast to operate above practical model during the PM peak hour for both the 2041 future baseline (92% DoS) and 2041 with scheme (90% DoS). The highest queue predicted was for the 2041 future baseline scenario with a queue of 23 PCU. This can be accommodated within the available link length.

6.6.487 A DoS value of 93% is forecast for the A4201 Parkway approach to the junction with Park Village East for the right turn movement in the 2041 future baseline scenario for the PM peak hour. The predicted queue of 8 PCUs can be accommodated within the available link length.

6.6.488 The DoS on all other links within the modelled scenarios is below the practical capacity threshold of 90% for signalised junctions.

A4200 Eversholt Street priority junctions

6.6.489 This section focusses on the modelling results of the priority junctions in the vicinity of Euston station. For ease reporting, these have been divided into four further groups. These are as follows:

- A4200 Eversholt Street junctions:
 - A4200 Eversholt Street/Lancing Street;
 - A4200 Eversholt Street/Doric Way;
 - A4200 Eversholt Street/Drummond Crescent;

- A4200 Eversholt Street/Phoenix Road;
- A4200 Eversholt Street/Polygon Road; and
- A4200 Eversholt Street/Barnby Street/Aldenham Street.
- A4200 Upper Woburn Place/Endsleigh Gardens;
- North Gower Street junctions:
 - North Gower Street/A501 Euston Road;
 - Drummond Street/North Gower Street;
 - North Gower Street/Stephenson Street;
 - North Gower Street/Euston Street; and
 - North Gower Street/Starcross Street.
- Western Junctions:
 - Stanhope Street/Granby Terrace/Park Village East;
 - Park Village East/Mornington Street;
 - Mornington Street/Mornington Terrace;
 - Augustus Street/Park Village East; and
 - Harrington Square/A400 Lidlington Place.

A4200 Eversholt Street junctions

6.6.490 Table 6-207 and Table 6-208 provide the modelling results for the junction of the A4200 Eversholt Street priority junctions for the AM and PM peak hours. The junction has been modelled using Junctions 8. As all of the junctions along A4200 Eversholt Street were modelled in TRANSYT (as part of the A501 Euston Road model), the results are presented in terms of the DoS and MMQ, measured in PCU.

Table 6-207: A4200 Eversholt Street Priority Junction modelling results - DoS

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM Peak	A4200 Eversholt Street/Lancing Street	A4200 Eversholt Street north	Left, ahead	15%	20%	23%	20%	24%
			Ahead	2%	2%	4%	2%	4%
		Lancing Street	Left, right	4%	4%	4%	4%	4%
		A4200 Eversholt Street south	Ahead, right	35%	28%	36%	30%	42%

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
	A4200 Eversholt Street/Doric Way	A4200 Eversholt Street north	Left, ahead	15%	21%	24%	20%	24%
			Ahead	2%	2%	4%	2%	0%
		A4200 Eversholt Street south	Ahead, right	22%	25%	30%	27%	35%
	A4200 Eversholt Street/Drummond Crescent	Drummond Crescent	Left, right	6%	7%	7%	7%	7%
	A4200 Eversholt Street/Phoenix Road	A4200 Eversholt Street north	Left, ahead	60%	23%	28%	22%	28%
		Phoenix Road	Left, right	11%	12%	12%	12%	14%
		A4200 Eversholt Street south	Ahead, right	21%	25%	30%	27%	35%
	A4200 Eversholt Street/Barnby Street/Aldenham Street	A4200 Eversholt Street north	Left, ahead, right	20%	29%	31%	30%	34%
		Aldenham Street	Left, ahead, right	-	6%	7%	6%	7%
		A4200 Eversholt Street south	Left, ahead, right	24%	28%	31%	30%	36%
		Barnby Street	Left, ahead, right	7%	11%	11%	11%	12%
PM Peak	A4200 Eversholt Street/Lancing Street	A4200 Eversholt Street north	Left, ahead	13%	18%	20%	18%	23%
			Ahead	3%	2%	4%	2%	4%
		Lancing Street	Left, right	4%	5%	5%	5%	5%
		A4200 Eversholt Street south	Ahead, right	28%	26%	36%	34%	41%
	A4200 Eversholt Street/Doric Way	A4200 Eversholt Street north	Left, ahead	14%	19%	21%	19%	23%
			Ahead	3%	2%	5%	2%	5%
		A4200 Eversholt Street south	Ahead, right	24%	21%	30%	28%	34%
	A4200 Eversholt Street/Drummond Crescent	Drummond Crescent	Left, right	5%	5%	5%	5%	5%
	A4200 Eversholt Street/Phoenix Road	A4200 Eversholt Street north	Left, ahead	59%	21%	25%	21%	28%
		Phoenix Road	Left, right	12%	16%	17%	16%	15%
		A4200 Eversholt Street south	Ahead, right	23%	21%	30%	28%	34%
	A4200 Eversholt Street/Barnby	A4200 Eversholt Street north	Left, ahead, right	19%	26%	27%	26%	34%

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
	Street/Aldenham Street	Aldenham Street	Left, ahead, right	-	7%	7%	7%	10%
		A4200 Eversholt Street south	Left, ahead, right	27%	25%	28%	29%	33%
		Barnby Street	Left, ahead, right	8%	9%	10%	10%	10%

Table 6-208: A4200 Eversholt Street priority junction modelling results - MMQ (PCU)

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM Peak	A4200 Eversholt Street/Lancing Street	A4200 Eversholt Street north	Left, ahead	0	0	0	0	0
			Ahead	0	0	0	0	0
		Lancing Street	Left, right	0	0	0	0	0
		A4200 Eversholt Street south	Ahead, right	6	0	7	0	9
	A4200 Eversholt Street/Doric Way	A4200 Eversholt Street north	Left, ahead	0	0	0	0	0
			Ahead	0	0	0	0	0
		A4200 Eversholt Street south	Ahead, right	3	5	4	7	3
	A4200 Eversholt Street/Drummond Crescent	Drummond Crescent	Left, right	0	0	0	0	0
	A4200 Eversholt Street/Phoenix Road	A4200 Eversholt Street north	Left, ahead	1	0	0	0	0
		Phoenix Road	Left, right	0	0	0	0	0
		A4200 Eversholt Street south	Ahead, right	0	0	0	0	0
	A4200 Eversholt Street/Barnby Street/Aldenham Street	A4200 Eversholt Street north	Left, ahead, right	0	0	0	0	0
		Aldenham Street	Left, ahead, right	0	0	0	0	0
		A4200 Eversholt Street south	Left, ahead, right	0	0	0	0	0
		Barnby Street	Left, ahead, right	8	0	0	0	0
PM Peak	A4200 Eversholt Street/Lancing Street	A4200 Eversholt Street north	Left, ahead	0	0	0	0	0
			Ahead	0	0	0	0	0
		Lancing Street	Left, right	0	0	0	0	0

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
		A4200 Eversholt Street south	Ahead, right	6	0	8	2	9
	A4200 Eversholt Street/Doric Way	A4200 Eversholt Street north	Left, ahead	0	0	0	0	0
			Ahead	0	0	0	0	0
		A4200 Eversholt Street south	Ahead, right	3	1	5	4	12
	A4200 Eversholt Street/Drummond Crescent	Drummond Crescent	Left, right	0	0	0	0	0
	A4200 Eversholt Street/Phoenix Road	A4200 Eversholt Street north	Left, ahead	1	0	0	0	0
		Phoenix Road	Left, right	0	0	0	0	0
		A4200 Eversholt Street south	Ahead, right	0	0	0	0	0
	A4200 Eversholt Street/Barnby Street/Aldenham Street	A4200 Eversholt Street north	Left, ahead, right	0	0	0	0	0
		Aldenham Street	Left, ahead, right	-	0	0	0	0
		A4200 Eversholt Street south	Left, ahead, right	0	0	0	0	0
		Barnby Street	Left, ahead, right	8	0	0	0	0

6.6.491 The results show that all of the priority junctions along A4200 Eversholt Street are forecast to operate with adequate spare capacity during the AM and PM peak hours for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios.

6.6.492 It should be noted that where the traffic flows at a junction along were found to be higher than the entry and exit flows at the next junction, the higher traffic flows were used and distributed along the A4200 Eversholt Street corridor.

A4200 Upper Woburn Place/Endsleigh Gardens

6.6.493 Table 6-209 and Table 6-210 provide the modelling results for the junction of A4200 Upper Woburn Place with Endsleigh Gardens for the AM and PM peak hours. The junctions have been modelled using Junctions 8. The results are presented in terms of the RFC and MMOQ, measured in PCU.

Table 6-209: Junctions south of A501 Euston Road priority junction modelling results - RFC

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A4200 Upper Woburn Place north	Ahead, right	12%	9%	24%	13%	22%
PM peak hour	A4200 Upper Woburn Place north	Ahead, right	11%	8%	20%	11%	35%

Table 6-210: Junctions south of A501 Euston Road priority junction modelling results - MMQ (PCU)

Peak	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	A4200 Upper Woburn Place north	Ahead, right	0	0	0	0	0
PM peak hour	A4200 Upper Woburn Place north	Ahead, right	0	0	0	0	0

- 6.6.494 The results indicate that the junction operates with spare capacity on all approach arms during the AM and PM peak hours for the 2012 baseline, 2026 and 2041 future baseline and 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The DoS on all other links is well below the practical capacity threshold of 90% for signalised junctions.

North Gower Street junctions

- 6.6.495 Table 6-211 and Table 6-211 provide the modelling results for the junctions with North Gower Street for the AM and PM peak hours. With the exception of the junction of North Gower Street with A501 Euston Road, the junctions have been modelled using Junctions 8. The junction of North Gower Street with A501 Euston Road has been modelled in TRANSYT as it forms part of the A501 Euston Road model. The results are presented in terms of the RFC (DoS for A501 Euston Road/North Gower Street) and MMQ, measured in PCU.

Table 6-211: North Gower Street priority junction modelling results - RFC/DoS

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	North Gower Street/A501 Euston Road	North Gower Street north	Left	-	4%	10%	4%	12%
		A501 Euston Road	Left, ahead	-	22%	23%	23%	25%
	Drummond Street/North Gower Street	North Gower Street north	Left, ahead, right	1%	2%	2%	2%	2%
		Drummond Street east	Left, ahead, right	1%	18%	5%	21%	4%
		North Gower Street south	Left, ahead, right	2%	3%	0%	29%	16%
		Drummond Street west	Left, ahead, right	14%	26%	34%	26%	44%
	North Gower Street/Stephenson Street	North Gower Street south	Ahead, right	2%	10%	18%	10%	18%
	North Gower Street/Euston Street	Euston Street east	Left, right	13%	15%	10%	17%	12%
	North Gower Street/Starcross Street	Starcross Street	Right, left	2%	2%	2%	2%	2%
		North Gower Street south	Ahead, right	2%	2%	8%	10%	10%
PM peak hour	North Gower Street/A501 Euston Road	North Gower Street north	Left	-	2%	14%	9%	33%
		A501 Euston Road	Left, ahead	-	53%	51%	52%	48%
	Drummond Street/North Gower Street	North Gower Street north	Left, ahead, right	2%	3%	3%	3%	3%
		Drummond Street east	Left, ahead, right	2%	0%	8%	1%	2%
		North Gower Street south	Left, ahead, right	6%	24%	24%	29%	10%
		Drummond Street west	Left, ahead, right	14%	33%	45%	36%	75%
	North Gower Street/Stephenson Street	North Gower Street south	Ahead, right	0%	3%	8%	4%	9%
	North Gower Street/Euston Street	Euston Street east	Left, right	21%	16%	16%	17%	21%
	North Gower Street/Starcross Street	Starcross Street	Left, right	3%	3%	3%	3%	3%
		North Gower Street south	Ahead, right	2%	2%	10%	2%	10%

Table 6-212: North Gower Street priority junction modelling results – MMQ (PCU)

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	North Gower Street/A501 Euston Road	North Gower Street north	Left	-	0	0	0	0
		A501 Euston Road	Left, ahead	-	0	0	0	0
	Drummond Street/North Gower Street	North Gower Street north	Left, ahead, right	0	0	0	0	0
		Drummond Street east	Left, ahead, right	0	0	0	0	0
	North Gower Street/Stephenson Street	North Gower Street south	Ahead, right	0	0	0	0	0
	North Gower Street/Euston Street	Euston Street east	Left, right	0	0	0	0	0
	North Gower Street/Starcross Street	Starcross Street	Right, left	0	0	0	0	0
		North Gower Street south	Ahead, right	0	0	0	0	0
PM peak hour	North Gower Street/A501 Euston Road	North Gower Street north	Left	-	0	0	0	0
		A501 Euston Road	Left, ahead	-	12	7	11	5
	Drummond Street/North Gower Street	North Gower Street north	Left, ahead, right	0	0	0	0	0
		Drummond Street east	Left, ahead, right	0	0	0	0	0
		North Gower Street south	Left, ahead, right	0	0	0	0	0
		Drummond Street west	Left, ahead, right	0	1	0	1	3
	North Gower Street/Stephenson Street	North Gower Street south	Ahead, right	0	0	0	0	0
	North Gower Street/Euston Street	Euston Street east	Left, right	0	0	0	0	0
	North Gower Street/Starcross Street	Starcross Street	Left, right	0	0	0	0	0
		North Gower Street south	Ahead, right	0	0	0	0	0

- 6.6.496 The results show that all of the priority junctions along North Gower Street is forecast to operate with adequate spare capacity during the AM and PM peak hours for the 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios.

Western junctions

- 6.6.497 Table 6-213 and Table 6-214 provide the modelling results for the western junctions for the AM and PM peak hours. The junctions have been modelled using Junctions 8. The results are presented in terms of the RFC and MMQ, measured in PCU.

Table 6-213: Western Junctions - priority junction modelling results - RFC

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	Stanhope Street/Granby Terrace/Park Village East	Stanhope Street	Ahead, right	6%	9%	23%	10%	24%
	Park Village East/Mornington Street	Mornington Street	Left	11%	0%	32%	6%	47%
		Park Village East south	Right	7%	6%	12%	7%	12%
	Mornington Street/Mornington Terrace	Morning Street east	Ahead	14%	2%	39%	8%	47%
		Mornington Street west	Left, ahead	19%	29%	41%	29%	71%
	Augustus Street/Park Village East	Augustus Street	Left, right	4%	3%	10%	3%	8%
		Park Village East south	Ahead, left	6%	1%	0%	1%	1%
PM peak hour	Harrington Square/A400 Lidlington Place	Harrington Square north	Right	38%	31%	10%	22%	10%
	Stanhope Street/Granby Terrace/Park Village East	Stanhope Street	Ahead, right	11%	20%	23%	22%	26%
	Park Village East/Mornington Street	Mornington Street	Left	5%	2%	18%	3%	33%
		Park Village East south	Right	10%	12%	17%	12%	13%
	Mornington Street/Mornington Terrace	Morning Street east	Ahead	8%	5%	23%	5%	47%
		Mornington Street west	Left, ahead	21%	32%	53%	33%	71%
	Augustus Street/Park Village East	Augustus Street	Left, right	3%	5%	10%	5%	11%
	Harrington Square/A400 Lidlington Place	Harrington Square north	Right	27%	41%	34%	42%	43%

Table 6-214: Western Junctions - priority junction modelling results - MMQ (PCU)

Peak	Junction	Approach	Movement	2012 baseline	2026 baseline	2026 with HS2	2041 baseline	2041 with HS2
AM peak hour	Stanhope Street/Granby Terrace/Park Village East	Stanhope Street	Ahead, right	0	0	0	0	0
	Park Village East/Mornington Street	Mornington Street	Left	0	0	1	0	1
		Park Village East south	Right	0	0	0	0	0
	Mornington Street/Mornington Terrace	Morning Street east	Ahead	0	0.02	1	0	1
		Mornington Street west	Left, ahead	0	0	1	1	1
	Augustus Street/Park Village East	Augustus Street	Left, right	0	0	0	0	0
		Park Village East south	Ahead, left	0	0	0	0	0
	Harrington Square/A400 Lidlington Place	Harrington Square north	Right	1	0	0	0	0
PM peak hour	Stanhope Street/Granby Terrace/Park Village East	Stanhope Street	Ahead, right	0	0	0	0	0
	Park Village East/Mornington Street	Mornington Street	Left	0	0	0	0	1
		Park Village East south	Right	0	0	0	0	0
	Mornington Street/Mornington Terrace	Morning Street east	Ahead	0	0	0	0	1
		Mornington Street west	Ahead, left	0	1	1	1	3
	Augustus Street/Park Village East	Augustus Street	Left, right	0	0	0	0	0
		Park Village East south	Ahead, left	0	0	0	0	0
	Harrington Square/A400 Lidlington Place	Harrington Square north	Right	0	1	1	1	1

6.6.498 The results indicate that all junctions are forecast to operate with spare capacity on all approach arms during the AM and PM peak hours for the 2012 baseline, 2026 and 2041 future baseline and 2026 HS2 Phase One and 2041 HS2 Phase Two scenarios. The RFC on all other links is well below the practical capacity threshold of 90% for priority junctions and the predicted level of queueing is extremely low.

Tottenham Court Road two-way operation sensitivity test

Context

- 6.6.499 In order to test the Proposed Scheme against potential, but as yet unconsented, transport infrastructure and development schemes in London, TfL and HS2 Ltd agreed to undertake a number of sensitivity tests. The main objective of undertaking the sensitivity testing was to ascertain any potential capacity issues on the transport network when the proposals for HS2 were combined with any of these potential schemes and to understand how any of these schemes could help mitigate the transport impacts of HS2.
- 6.6.500 The sensitivity test specifically relevant to CFA1, CFA2 and CFA3 comprised the sensitivity test undertaken for the Tottenham Court Road two-way (TCR two-way) scheme. It was based on scheme details and model coding provided by TfL. The sensitivity test was undertaken for the 2026 and 2041 AM peak and compared against the 2026 and 2041 AM peak future baseline plus operation scenarios. It did not involve a separate LTS run.

Changes to the highway network

- 6.6.501 As part of the West End Project (WEP) Study, it is proposed that Tottenham Court Road and Gower Street will become two-way for traffic, although this is not a committed scheme. As a result of the proposed scheme, traffic will reassign on the local road network as well as the wider area. A number of options were investigated by SKM Colin Buchanan (SKMCB) in consultation with LBC and TfL to assess the impact of the traffic reassignment for the proposed options.
- 6.6.502 Following discussions with TfL, it was agreed that the TCR two-way Option 3 should be run as a sensitivity test in SATURN using the updated 2012 CLoHAM.
- 6.6.503 Option 3 comprises the restriction of Tottenham Court Road (south of Grafton Way) to buses, cycles and delivery vehicles only (with exception of cars travelling east-west). Only buses and cyclists would be permitted northbound on Tottenham Court Road at St Giles Circus and southbound on Tottenham Court Road at Euston Circus. Gower Street would be open to all vehicles in both directions, with northbound vehicles accessing Euston Road via Grafton Way.

Impacts of operation on junctions in 2026

- 6.6.504 A junction capacity analysis has been undertaken comparing junction operation in the 2026 future baseline plus operation with the 2026 future baseline plus operation plus TCR two-way Option 3. The assessment of junctions is based on the relationship of flow to capacity measured as the Volume Capacity (VoC) ratio.

6.6.505 Junctions have been identified as 'triggered', as follows:

- the VoC for an approach arm is lower than 0.87 in the future baseline plus operation but increases to over 0.87 during the operation of the TCR two-way scheme and the increase is 2% or more; or
- the VoC for an approach arm is over 0.87 in the future baseline plus operation and, during the operation of the TCR two-way scheme, increases by 2% or more.

6.6.506 The results of the 2026 AM assessment are shown in Table 6-215 and indicate that four junctions are triggered in the local area.

Table 6-215: 2026 AM peak - junctions exceeding criteria

Junction	Future baseline plus operation	TCR two-way sensitivity test
A401 Shaftsbury Avenue/A400 Charing Cross Road	73	91
A400 Bloomsbury Street/Store Street	19	92
A400 Gower Street/Torrington Place	80	107
A400 Bloomsbury Street/Great Russell Street	67	94

6.6.507 This indicates that the TCR two-way scheme affects only a limited number of junctions in 2026 and that these junctions are all local to the Tottenham Court Road area. The VOC for most junctions increases to around 90% and only one junction experiences a VOC greater than 100%. All of junctions affected are signalised junctions.

6.6.508 Most signalised junctions in central London are under adaptive control, such as SCOOT, which will optimise the signal stages in real time to account for changes in traffic patterns and volumes. Therefore, affected junctions could be mitigated through adaptive control.

Impacts of operation on road network in 2026

- 6.6.509 The traffic flow impacts of the TCR two-way scheme were assessed by comparing the change in traffic flow between the future baseline plus operation and future baseline plus operation plus TCR two-way scheme. The flow differences for the AM peak hour are shown in Figure 6-182 in PCU/hour. The width of the band indicates the proportional change in traffic with red representing an increase and green a decrease compared to the 2026 future baseline plus operation. The flows, in vehicles/hour on key links forming two screenlines north and south of Euston Road are shown in Table 6-216 for the AM peak. The delays at junctions for the future baseline plus operation and operation plus TCR two-way for the AM peak hour are shown in Figure 6-183 and Figure 6-184. Some junctions in the Tottenham Court Road/Woburn Place/Oxford Street area see an increase in delay. There is also an increase in delay at the junction of Eversholt Street/Oakley Square.
- 6.6.510 Traffic flow changes are as a result of the general traffic being diverted onto Gower Street from Tottenham Court Road in the northbound direction and the diversion of buses off Gower Street in the southbound direction onto Tottenham Court Road.
- 6.6.511 Traffic flow changes as a result of the TCR two-way scheme are bounded by Euston Road (to the north), Regents Street (to the west), The Mall (to the south) and Grays Inn Road (to the east), with little impact north of Euston Road. The northbound flow on Tottenham Court Road south of Howland Street decreases by 700 vehicles/hour, whilst the northbound flow on Charing Cross road decreases by a similar amount. There is a slight reduction in flow on Euston Road in both directions west of Tottenham Court Road, in the westbound direction along Endsleigh Gardens and in the southbound direction along Gordon Street.
- 6.6.512 Figure 6-182 indicates that there is an increase of 510 PCU/hour westbound on Grafton Way, 320 PCU/hour northbound on Shaftsbury Avenue and 270 PCU/hour southbound on Montague Place.
- 6.6.513 Taking the flows to the north of Euston Road as shown in Table 6-216, most roads experience only a modest change in flows with total flow across the screenline decreasing by between 10 and 60 vehicles/hour. South of Euston Road, the TCR two-way scheme results in a decrease in northbound flow on Tottenham Court Road. Most other roads in the area experience only a modest change in flows, with total flow across the screenline decreasing by only 100 vehicles/hour in both directions.

Figure 6-182: Traffic flow changes - future baseline plus operation vs. future baseline plus operation 2026 plus TCR two-way 2026 AM peak PCU/hr

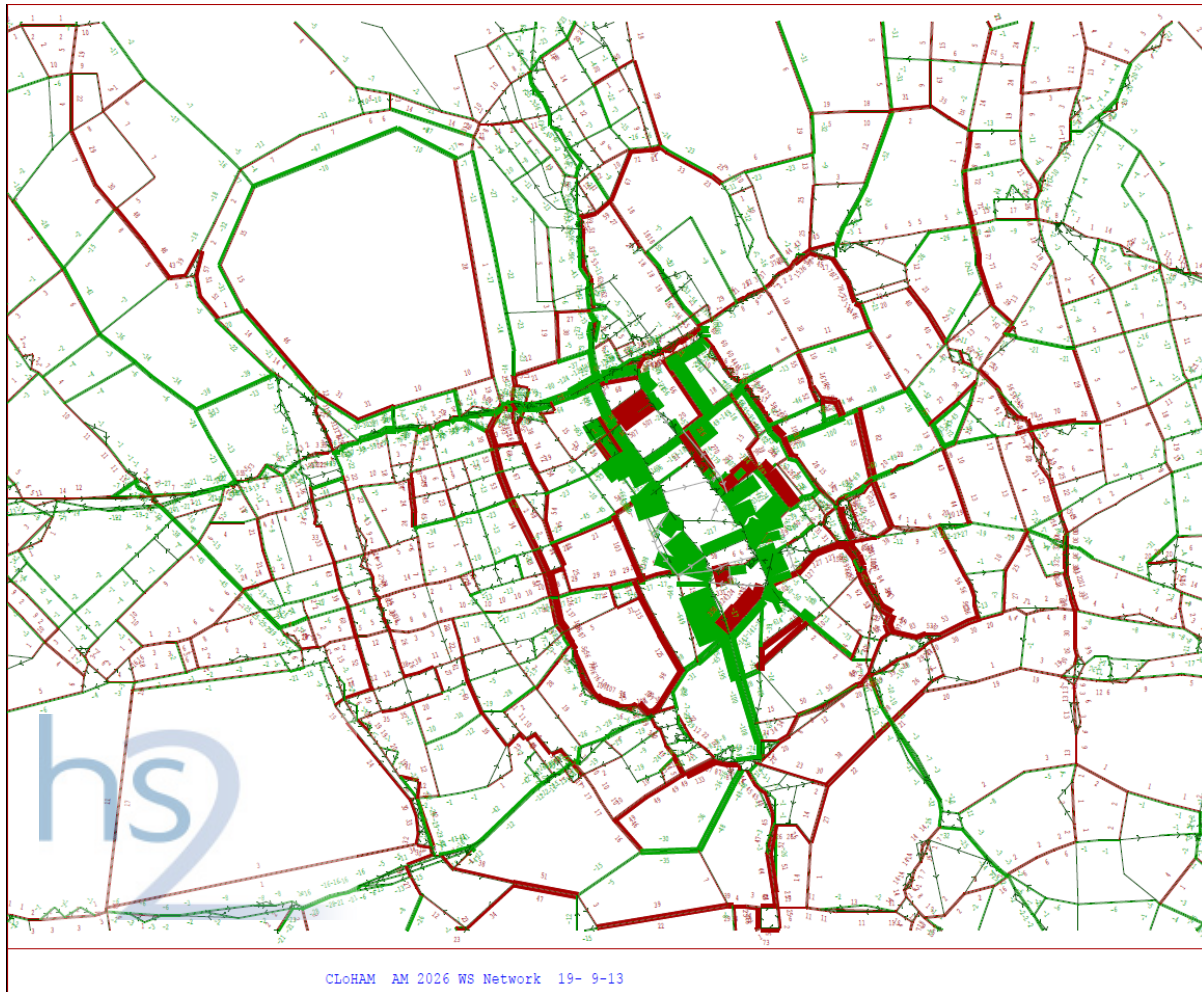


Table 6-216: Flow differences future baseline vs. future baseline plus operation. 2026 AM peak

Link		2026 with HS2 traffic		2026 with HS2 plus TCR two-way traffic		With HS2 actual change from 2026 with HS2 traffic		With HS2 % change from 2026 with HS2 traffic	
		All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Outer circle (between Park Square East and Chester Road)	Northbound	311	0	338	0	28	0	9%	
	Southbound	218	0	219	0	1	0	1%	
A4201 Albany Street (between Robert Street and Longford Street)	Northbound	313	29	293	29	-20	1	-6%	2%
	Southbound	367	17	357	17	-10	0	-3%	-1%
Stanhope Street (between	Northbound	100	4	115	5	15	1	15%	15%

Link		2026 with HS2 traffic		2026 with HS2 plus TCR two-way traffic		With HS2 actual change from 2026 with HS2 traffic		With HS2 % change from 2026 with HS2 traffic	
		All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
Longford Street and Robert Street)	Southbound	395	11	450	12	55	1	14%	10%
A400 Hampstead Road (between Drummond Street and Robert Street)	Northbound	525	10	511	5	-15	-5	-3%	-49%
	Southbound	803	44	829	45	26	1	3%	1%
Cardington Street (north of Drummond Street)	Northbound	0	0	0	0	-	-	-	-
	Southbound	0	0	0	0	-	-	-	-
New Cobourg Street (north of Starcross Street)	Northbound	380	1	441	1	62	0	16%	26%
	Southbound	324	0	387	0	64	0	20%	
A4200 Eversholt St (between Phoenix Road and Polygon Road)	Northbound	322	15	349	17	26	2	8%	11%
	Southbound	317	12	257	10	-60	-2	-19%	-20%
Chalton Street (between Euston Road and Phoenix Road)	Northbound	130	4	124	3	-6	-1	-5%	-30%
	Southbound	85	2	85	2	0	0	0%	3%
Midland Road (between Brill Place and Euston Road)	Southbound	639	31	628	28	-11	-2	-2%	-7%
A5202 Pancras Road (between Euston Road and Goods Way)	Northbound	357	11	368	11	11	0	3%	3%
	Southbound	228	10	226	10	-1	0	-1%	-1%
A5203 York Way between Euston Road and Caledonia Street	Northbound	582	31	605	32	23	1	4%	2%
North of Euston Road	Northbound	3020	105	3144	103	124	-2	4%	-2%
	Southbound	3375	127	3438	124	64	-3	2%	-3%
A4201 Portland Place (between Devonshire Street and Park Crescent)	Northbound	312	4	344	6	32	2	10%	44%
	Southbound	465	13	549	12	84	-1	18%	-6%
B506 Great Portland Street (between Park Crescent Mews East and Devonshire Street)	Southbound	196	12	227	12	31	0	16%	-3%
Cleveland Street (between Greenwell Street and Clipstone Street)	Southbound	248	7	273	8	25	0	10%	4%
A400 Tottenham Court Road	Northbound	898	59	708	49	-189	-10	-21%	-17%

Link		2026 with HS2 traffic		2026 with HS2 plus TCR two-way traffic		With HS2 actual change from 2026 with HS2 traffic		With HS2 % change from 2026 with HS2 traffic	
		All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)	All vehicles incl. buses (veh)	HGV (veh)
(between Grafton Way and Warren Street)	Southbound	-	-	75	0	75	0	-	-
A400 Gower Street (between Grafton Way and Gower Place)	Southbound	702	25	563	26	-139	1	-20%	4%
Gordon Street (between Endsleigh Gardens and Euston Road)	Northbound	0	0	0	0	-	-	-	-
	Southbound	0	0	0	0	-	-	-	-
A4200 Upper Woburn Place (between Endsleigh Gardens and Euston Road)	Northbound	435	37	440	35	4	-1	1%	-3%
	Southbound	746	23	561	20	-185	-3	-25%	-13%
B504 Judd Street (between Bidborough Street and Euston Road)	Northbound	221	16	238	15	17	0	8%	-3%
	Southbound	437	26	442	24	5	-2	1%	-8%
A501 Grays Inn Road (east of Birkenhead Street)	Northbound	1857	88	1924	90	68	2	4%	2%
South of Euston Road	Northbound	3723	204	3654	196	-69	-8	-2%	-4%
	Southbound	2795	106	2690	101	-105	-5	-4%	-5%

6.6.515 Figure 6-183: Delay at junctions - future baseline plus operation 2026 AM peak

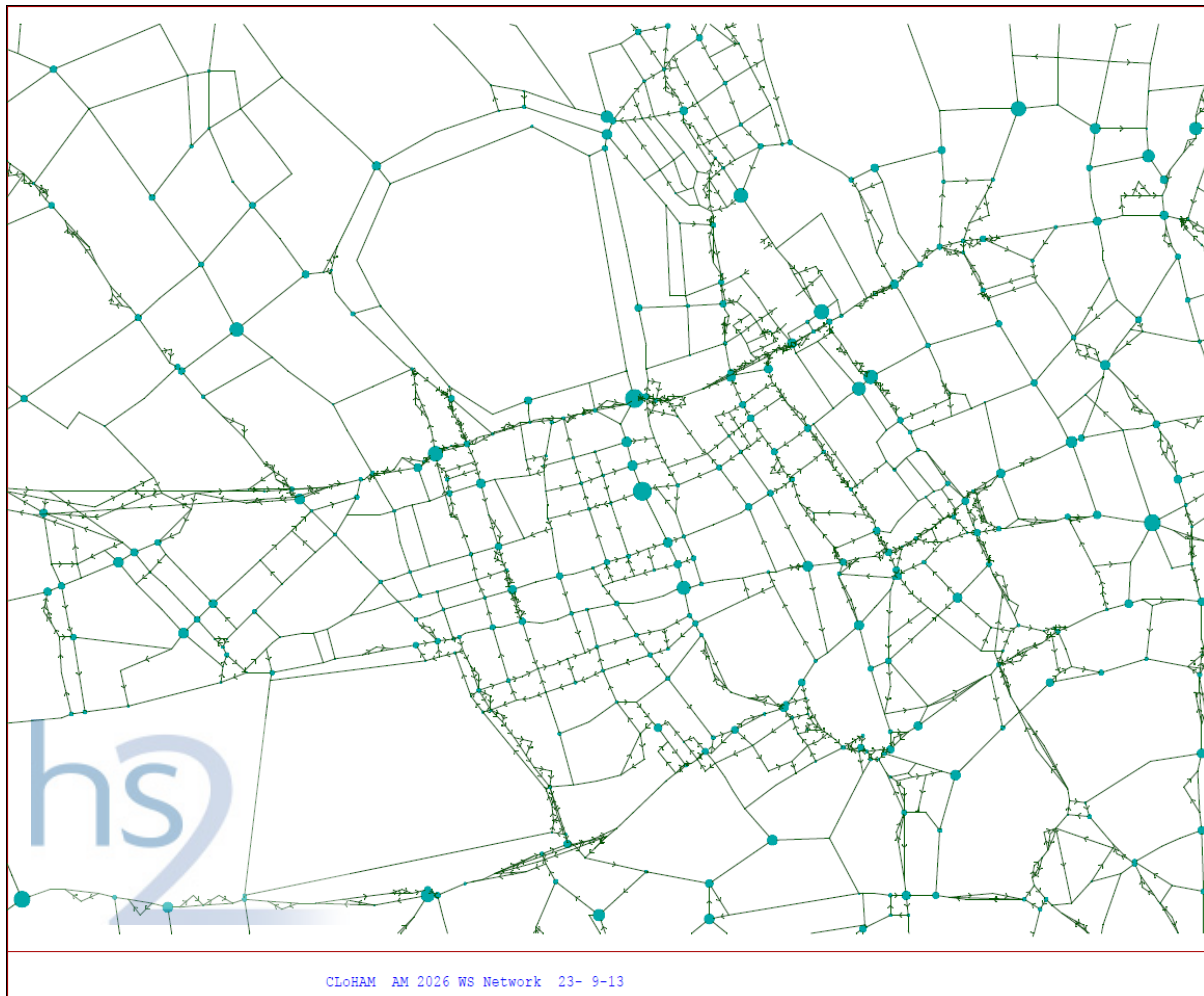
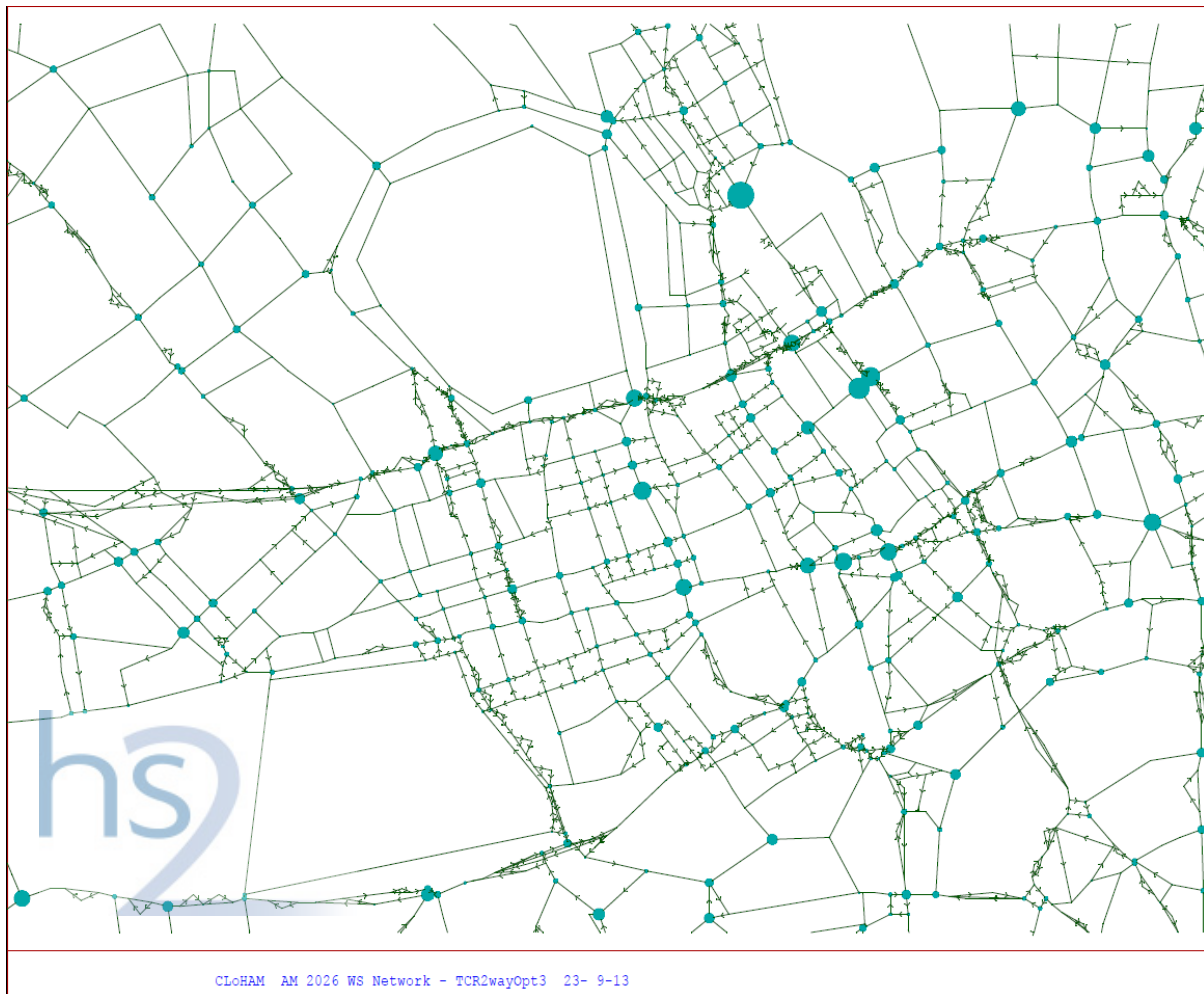


Figure 6-184: Delay at junctions - future baseline plus operation plus TCR two-way 2026 AM peak



Journey time impacts to HS2 passengers

- 6.6.516 The TCR two-way proposals would have no more than a modest impact on the operation of the highway network in and around Euston station. Accordingly, impacts to HS2 passengers in the immediate vicinity of the station will be negligible.

Summary

- 6.6.517 The TCR two-way scheme has positive and negative impacts, all of which modest in and around Euston station and none of which changing the impacts of the Proposed Scheme.